The Builder.

No. CV.

SATURDAY, FEBRUARY 8, 1845.

FROM the large number of letters that we continue to receive on the subject of the Metropolitan Buildings Act, and the eagerness with which all we say on it is canvassed, we find it necessary to return to that subject. As might have been expected, opinions differ as to the precise meaning to be attached to certain parts of the Act, and there seems to be this difficulty, that doubts cannot be resolved without expense. The point most discussed at the present moment, is the meaning of the word "commenced." We inserted two letters upon it in the last number of the journal, and have received many more since, the writers of which insist, that if an intention to build has been operatively demonstrated before the time specified in the Act, the building is commenced, and does not come under the control of the district surveyor. The following, which is signed "An Old Surveyor," may serve as an exponent of those who, regarding the word in its widest sense, hold this opinion:—

"SIR,—Above all controversies of the present day, disturbing the metropolitan building community, the most vexatious and absurd is the present unnecessary discussion upon the construction of a word which of all others is perhaps the least susceptible of quibble or evasion. Can any ambiguity attach to the term '*commenced before*,' in contradiction to the term '*commenced after*,' a certain date? Are they not the most comprehensive and definitive terms that can be employed to describe two opposite conditions? And these words, be it remembered, are employed in '*the construction of terms used*' in the above Act to define these two opposite conditions. Nevertheless, upon these words a very absurd disputation has been raised by parties desirous of opposing the operations of builders; and some of the district surveyors have been called upon to assume the power of giving these words weight and force, or of divesting them thereof, according to the locality in which such buildings are 'commenced before 1st January, 1845;' thus requiring a construction to suit the interest or inclination of persons who call for the interference of those gentlemen. But what is more strange and unaccountable is that this extra-official duty has been regarded by some of the old-fashioned district surveyors as a proper point for dispute, and consequently for heaping additional labours unnecessarily on the official referees appointed by the new Act.

"In order to avoid the delays and uncertainties attendant on all new systems before they are thoroughly understood, many persons desirous of proceeding with their building, had '*commenced before the 1st January*, 1845,' according to the provisions of the Act under such circumstances; but, in some cases, impediments having arisen to prevent the entire footings of *some part* of their building being laid down before the 1st January (though perhaps ten times more brick-work had, in reality, been built than would have been done had the whole of the footings inclosing the area of the proposed building been completed), yet, notwithstanding such a substantial demonstration of a building being in progress, so that he who runs may see that a building is '*commenced*,' some of the surveyors have been pleased to cause the suspension of such buildings, and thus to set at nought the intention of the Act of Parliament, the terms whereof are so definitively settled by 'the construction of terms and expressions used in the Act;' which construction is evidently intended to rescue from all interested feelings whatever both the time and property of builders, who might otherwise have been exposed to the mercy or caprice of any party."

Another correspondent writes, "It is a settled axiom that words employed in the construction of terms used in any Act to define the intention and meaning of such terms, are always to be read in the most comprehensive and general signification, as all Acts of Parliament are intended to be understood by those whom they purport to regulate, and not to become clap-traps for any body. This is more particularly the case in all penal statutes, which the Buildings Act, sec. 18, most unquestionably is, and no person has power to put any other construction on the terms of any Act contrary to or differing from the construction of terms forming part of such Act, and in no case are the *words* used to construe the terms of any Act, to be subject to any variation of reading or to any construction whatever, other than the general and universal sense and bearing of the words employed to construe the terms of such Act.

"In proof of the position here taken, you will observe that the terms used to describe the reverse of 'already built,' namely, '*hereafter to be built*' *are to apply to all Buildings to be built or commenced after*,' *&c.*; consequently, whatever is '*commenced*' in any way 'before,' cannot be left to share the fate with those Buildings which are '*to be commenced after*,' *&c.*; there really is no ambiguity about it.

"The more these words are looked at, the more *comprehensive* and *absolute* they become in the eyes of, Sir, your obedient servant,

"SENEX."

Now, the referees have given as their general opinion that "the erection of the footings, with two or more courses of the walls themselves, built in a workmanlike manner," is a *bonâ fide* commencement.* Having regard to their judicial capacity, however, they consider it necessary that each case should be judged of under its particular circumstances; and it is much to be desired that a certain number of cases should at once be submitted to them and decided, by the result of which district surveyors and the public might be guided.

Shooting a load of bats on the proposed site of a building, or digging a few trenches, or even laying a few bricks, cannot surely constitute the commencement required by the Act; yet either of these is an "operative building demonstration," said by our correspondent, "Consiliarius," last week, to be all that is necessary to avoid the control of the surveyor. A hod of mortar made up, and a couple of bricks laid, might be termed so with equal truth, and called the commencement of a church, a theatre, a villa, or a union workhouse, yet no one would venture to assert that this was sufficient.

Something more is required, then, than an "operative building demonstration" to constitute the commencement required by the Act, and the question is, how much? The answer really seems obvious; THE FIRST COMPLETE STEP MUST BE TAKEN; we must be able to see that a *house* is commenced, not merely that a wall is built: and this is the view we have little doubt that the official referees take of the matter.

In many cases where builders *have* exemption, we do not hesitate to say, they would do wisely were they to throw it up, and proceed under the Act, rather than complete structures badly begun. Buyers will be found more easily for houses constructed under its provisions, than for those which have been built in evasion of them. Knowing human nature, however, we hardly hope to persuade many to adopt this course.

We mentioned at the commencement that the construction to be put on doubtful points in the Act could not be decided without expense. This is unquestionably an evil, and will tend to prevent the due administration of the law. In the first instance the official referees were willing to answer generally such questions as were put to them by the surveyors, but having regard to their judicial capacity, before alluded to, and knowing that these general replies might act injuriously, they asserted the necessity of hearing in each case the parties whose rights might be affected, before deciding; so that, if we are correct, in order to obtain a decision on any point, the surveyor must run the risk of having the costs of the inquiry to pay out of his own pocket. This, when the Act is understood, and the exact meaning of its various clauses has become established, may work satisfactorily; but it does not seem to do so at the present moment. An intermediate party appears to be required, and perhaps the best step the district surveyors could take under the circumstances would be the appointment of some person to act in all cases on their behalf, who might acquire the views of the official referees, and so save much trouble and expense.

Before leaving the subject, we would contradict a statement which has appeared in some of the newspapers to the effect that numerous families have been already ejected, under the provisions of the Buildings Act, from cellars and under-ground rooms not constructed in accordance with its provisions. The Act does not operate in this respect till the 1st of July, 1846.

* See letter on this point from Mr. Greenway Robins.

ARCHITECTURE FOR THE POOR.

BY GEORGE GODWIN, F.R.S.

PUBLIC attention is at last aroused to the necessity of inquiring into and alleviating the condition of the poor, and men of all classes and in all counties are *talking* of improving the dwellings of the labouring classes and increasing their enjoyments. Whether or not they will do more than talk remains to be seen, for at present there is little of the "positive" to be appealed to as the result of the movement. Certain, however, it is that so much on the subject has never been said continuously before, nor so extensive a machinery organized to effect it. There is a society for improving the condition of the labouring classes, there is a metropolitan association for improving the dwellings of the industrious classes, a proposal to open public nurseries for their children, an association for promoting the health of towns, country labourers' improvement societies, and committees for obtaining baths and wash-houses, parks and public gardens. Her Majesty the Queen calls on Parliament to promote the comfort of the poorer classes:* all the newspapers are advocating the same noble cause; every landowner who expresses sentiments in favour of such improvements may rely on having his speech quoted, and every chairman of a committee whose report contains allusions to the dreadful state of the hovels occupied by the agricultural labourers, or the cellars and garrets crowded with the families of operatives in great towns, is certain of public sympathy and public applause. "Let us look at the cottages about us, and see how we can repair them, and make them comfortable at little expense," said his Grace of Norfolk at the late Arundel Christmas Show. "Let us make their cold cottages warmer than they are; let us look to their windows and their doors, and see if they keep out this desperate cold wind that is blowing, and even if we do no more, we shall add to their comforts. Put the poor man's cottage in order, and as quickly as you can, and he will bless you, and we shall all be united together; and the more we are united, the stronger we shall be, and the more able to meet our difficulties." And

* "The health of the inhabitants of large towns and populous districts in this part of the United Kingdom has been the subject of recent inquiry before a Commission, the Report of which shall be immediately laid before you.

"It will be highly gratifying to me if the information and suggestions contained in that Report shall enable you to devise the means of promoting the health and comfort of the poorer classes of my subjects."—*Queen's Speech*, Feb. 4th.

approving crowds repeated, and still repeat, "put the poor man's cottage in order." That it needs to be put in order all admit. What Sir Henry Bunbury said in his recent report to the Labourers' Improvement Society of one county will apply to the others:—"Under the head of *cottages* the reports are in general painful. In a few parishes, where opulent landowners are resident, the cottages are represented to be good. But, speaking of the great majority, it appears that there are few parishes in which the cottages are even sufficient in number; and generally they are stated to be small, crowded, in bad repair, ill drained, and unfit for the decent accommodation of the families which inhabit them. Those which are the property of landowners appear to be the best; but almost everywhere, speculators have acquired small patches of land on which they have built what our ancestors called 'silly cottages,' with little or nothing in the shape of a garden attached to them; and these they let at rents which are ruinous to the labourers."

And then again,—"the reports on cottages exhibit generally the melancholy picture of a population ill-lodged, exposed to influences which engender diseases, and crowded to a degree which is not only likely to produce filthy habits, but gross indecency and vice. But this unhappily is a branch of our inquiries on which we are nearly powerless. All that we can do is to endeavour to open the eyes of landowners as to the insufficiency of the dwellings intended for the labourers on their estates, and the evil effects, both physical and moral, which result from the want of decent and wholesome accommodation. At the same time we may draw attention to the injurious consequences which spring from speculation in cottage building. The heavy rents exacted by these griping speculators contribute largely to depress the condition of the labourers, who are left without an option, if the owners of estates neglect to provide sufficient dwellings for the families of those by whom their estates are to be cultivated."

All that he said has been known long and long ago, through sanatary reports, which present an account of distress, disease, and demoralization, resulting from inattention to the dwellings of the poor, that cannot be contemplated without horror; but the wealthier part of society were not then so alive to its importance as they are now, and therefore it excited less attention. A kindlier feeling than was formerly exhibited towards the poor is springing up in the hearts of their superiors, and all classes will unquestionably benefit by the exercise of it.

Feeling and saying, however, are not enough, there must be *doing*, efficient doing; and it is to be hoped that the willingness which exists, and the large sums of money that in various shapes have been subscribed, will be applied in the best manner.

The importance of providing healthful and well-arranged dwellings can hardly be overestimated. As the writer observed some years ago, when urging the same point:—"Order will not engender disorder, nor disorder, order: but its like; and the man who passes his time amidst inconvenient and tasteless arrangements, exposed to continual discomforts, and utterly unable to maintain an appearance of respectability, will gradually lose any desire to do so which he formerly felt, and find the external disorder result in a moral disorganization, lamentable in its consequences, if not fatal. 'Slaves, through alavery, lose even the desire to be free:' so men, becoming accustomed to badly-constructed, inconvenient, and ill-arranged habitations, lose their perception of excellence and goodness; and are lowered, not merely in their physical state, but mentally. Watch the progress of many a respectable and industrious young couple, placed in one of the miserable hovels still dignified with the title of a labourer's residence in some parts of the kingdom—damp, ill-drained, ill-ventilated, pervious to the rain, and void of every thing which could make home happy. For a time, strenuous efforts are used to remedy the evils; but, as they are gradually found to be unconquerable, the wife, abandoning the task, becomes inevitably a slattern herself; habits even of decency are diregarded by the children; and the husband, finding no enjoyment in his own house, seeks it in the beershop, and becomes a drunkard and a desperado. On the other hand—a tidy, well-arranged dwelling leads to observances of better manners and feelings of self-respect, induces neatness and industry, and elevates in tone the character of all its occupants."

In all cases perfect ventilation is of the first importance. The deadly effects of breathing an impure medium would seem to be too generally admitted to require observation, and one would expect to find in all new dwellings the best arrangements for obtaining a free current of pure air. Unfortunately, ignorance and cupidity still operate to prevent this. At Liverpool lately, the writer observed with regret in one district more than a dozen narrow courts in progress, *closed at one end*, and lined with ill-ventilated houses; and took occasion publicly to point out the evils of such an arrangement in the strongest language he could command. The policy which prompts it is as short-sighted as it is unchristianlike. A fever, when generated, is no respecter of persons; and the landowner far removed from the immediate seat of contagion, might none the less surely fall one of its victims. The injurious effects of closed courts have been proved by numerous competent parties, and the new Buildings Act very properly forbids the erection of such within its limits. How distressing it is, then, to find that the first houses built by the "Society for Improving the Condition of the Labouring Classes," model-houses to be recommended for adoption, are actually made to form a court closed at one end, and less than 23 feet wide!* It is difficult to guess what could have led the committee into this unfortunate mistake, which is a practical contradiction of what many of its members have often urged, and will probably prevent for several years to come, the abandonment of this most defective and injurious mode of laying out ground in localities not within the control of the Act. It is seriously to be desired that the committee may be induced to modify their present plan, and so avoid the reproach which the consummation of it would unquestionably bring to them.

At the present moment houses for the lower classes are especially needed in the metropolis. The recent formation of new streets has driven out hundreds of poor families without furnishing another place of retreat; and, by the operation of the Buildings Act, still greater numbers of persons will be ejected next year from kitchens and cellars (damp, unwholesome holes) not constructed in accordance with its provisions. Now is the time, therefore, to provide them with well-ventilated, substantial, and healthful dwellings, and to teach them the importance of cleanliness, and the value of order.

ELECTION OF SURVEYOR TO THE HORNSEY DISTRICT IN THE ROOM OF THE LATE ALFRED BARTHOLOMEW, ESQ.

(*January 30th*, 1845.)

		No. of Votes.
Elected—	Rawlinson Parkinson ..	41
	Henry John Hammon ..	30
	Thomas Bird	23
	Witherden Young	5
	James Harrison.....	4
	William Frederick East..	0

PURCHASE OF THE FLEET PRISON.—A report from the City Lands Committee on the subject of the reference made to them to open a communication with the Commissioners of Woods and Forests to ascertain upon what terms the Fleet Prison could be purchased, has recently been presented to the Court of Common Council. The report states that the committee had offered 23,000*l.*, but that the Commissioners of Woods and Forests had declined to accept less than 25,000*l.*, the sum at which the property had been valued by three eminent surveyors. The commissioners had given the corporation an option of making the purchase at that sum until the 28th ultimo, and the committee, by their report, unanimously recommended that the purchase should be effected. Mr. Dixon, in moving the Court to agree with the committee in their report, bore testimony to the courteous manner in which the deputation had been received by the Earl of Lincoln, who came to town expressly to meet them. The motion was agreed to.

* In the Bagnigge Wells-road, as already pointed out in this journal. See p. 1 of present volume.

CHIMNEY-SHAFT AT THAMES BANK.—EXPANSION OF BRICKWORK BY HEAT.

EVERY school-boy knows that heat expands bodies. A rod of metal made to fit an opening when cold, will not enter the opening if it be heated; and a glass vessel cracks if hot water be poured into it, because, as all are aware, the portion in contact with the heated fluid is expanded, while the other parts remain at rest. This property of heat was made available years ago in forcing upright the walls of a gallery which leaned outwards at the top. Bars of metal were passed across the gallery through the two walls, and were secured outside by a plate screwed on to each end of the bar tightly against the wall. The bars were then heated, and, being expanded by the operation, protruded slightly through the walls, and allowed of the plates being screwed farther on, the effect of which of course was that when the bars, being cooled, collapsed, the walls were drawn together, and by repetitions of the operation were ultimately made perfectly upright. The force exerted is immense.

All this we say is well known, and opportunities occur every day to observe the effect of heat on such substances as are here alluded to. Some bodies, however, expand much less than others, and the effect can seldom be observed, and *alumina*, or argillaceous earth, is an exception to the general rule, and *contracts* when heated. Brickwork it would seem is nevertheless expanded by heat, and it is to an instance where the expansion is to be seen and can be measured, that we direct the attention of our readers.

At Mr. Thomas Cubitt's fine establishment at Thames Bank, mentioned in the last number of our journal, the chimney-shaft for the steam-engine is constructed in a peculiar manner. The chimney, which is circular, 5 feet in clear diameter all the way up, and 105 feet high, is built of very thin brickwork; that is to say, it is 14 inches thick at the bottom, and 6 inches at the top, the bricks having been moulded for the purpose; and it stands in the centre of a tower, 17 feet square on the outside, formed of 14 inch walls all the way up with hoop-iron bond in the centre of the walls at certain intervals. The first tier of this bond is 15 feet from the ground; the other tiers are put closer together as they approach the top. Around the shaft, but in no case touching it, are stone steps leading to the top with landings at certain intervals.

The chief reason for adopting this mode of construction was, to obtain a more striking object for appearance' sake than a chimney-shaft, and Mr. Cubitt is of opinion that its ultimate cost will be less than that of the latter: it economises the fuel to a considerable extent, and, moreover, the shaft must have been formed much more expensively if there had been no tower around it.

Now this shaft, standing independent of the surrounding building with the means of access to it at any part, afforded the most perfect facilities for ascertaining the effect of heat upon this height of brickwork, and an index having been set up on the topmost landing under cover, which is 80 feet from the ground, it is found that this length of shaft becomes $\frac{5}{8}$ths of an inch longer when the fire is lighted than it is when cold. The construction of this shaft offers facilities for several other interesting and important inquiries, which will doubtless be pursued by the excellent and able owner of it.

FALL OF A HOUSE IN WESTMINSTER.—On the 16th of last month, a house at the corner of Old Pye-street, Westminster, fell down, but fortunately without injuring any person. The occurrence having excited much comment, we thought it our duty to inquire into the occurrence. It seems that Mr. Howell, the district surveyor, having received intimation that the building was in a dangerous state, repaired to the spot, and finding that it was so, gave orders that it should be shored up, and then dispatched information to the official referees. Before any thing could be done, however, the house fell. It seems that Mr. Howell had overstepped his duty in ordering it to be shored up, but if he had not done so, lives might have been sacrificed.

MR. COCKERELL'S FOURTH LECTURE ON ARCHITECTURE.

The professor commenced his lecture on Thursday, the 30th ult., by stating that he proposed on that occasion to make some further observations on the subject of the last lecture, namely, the civil architecture of the ancients. He should treat of plans; concealment and intricacy, adopted with the view of increasing the effect of a structure; palaces; curvilinear fronts; architectural character; and the angle of vision; and terminate by exhibiting, for the first time in this country, drawings of a temple at Xanthus discovered by the late expedition. To penetrate the merit of ancient works, and understand the principles on which they were formed, was the great business of the student: to establish these principles was the great business of the master. This was a difficult task, and could hardly be achieved: it was best done by discussion, examination, and comparison of opinions. A consciousness of delight from the examination of fine works was necessary before taste could be acquired: those persons who had not this consciousness never would acquire taste. Being delighted, we should at last be able to discover the cause of delight. One course was, to accept the dogma of the master blindly: advantage always resulted. A builder with whom he was acquainted once produced an exceedingly fine portico, so much so that the professor inquired of him how he had designed it. "Why," said the man, "I opened Sir William Chambers' book, and copied it exactly." If the job had been his, the professor's, he would have been led probably to do something of his own, or to have altered parts, and so have injured it. The builder, he felt, was the wiser. He once, when designing a portico of a church, had doubts as to two things taught him by Vitruvius, to place the main door to the building in the centre of it, and to use the attic base. He hesitated, but a friend shewing him a number of drawings from actual examples corroborating the doctrine, he followed Vitruvius, and never regretted. He again urged the necessity of implicit faith in the master on the part of the student. To establish principles, numerous examples must be compared: this was the course also pursued by the lawyer and the historian. He then drew particular attention to Canina's work mentioned in the last lecture. It contained 500 plates, and presented the whole body of architecture recovered, and in many cases restored with wonderful erudition. We were able, by means of that work, to penetrate the principles which the ancients followed, and discover the secret of their success.

Relative to concealment; he said we found temples surrounded by a peribolus, the temple only partly seen, and were struck by the effect obtained. The Parthenon was partially concealed by the Propyleum and the walls. The best distance from which to view a building was one equal to about three times the height of the elevation. When we get within the inclosure, we find this best position. The imagination is excited by partial concealment. If, according to the modern practice, the building be stuck ostentatiously before us, we see at once the whole of it, and are tired before we approach. There is nothing to be imagined or discovered. This partial concealment, then, he considered of high importance. It prevailed in Gothic architecture equally. The introduction of the organ at the east end of the nave, sometimes complained of in our cathedrals was, he thought, advantageous to the effect.

Architecture regarded with these considerations is the fine art. The successful architect must be a painter. The most efficient masters of effect were scene-painters, for example, Vanburgh and Servandoni, who designed St. Sulpice, the most effective modern building in Paris. Perspective was much studied at the time of these masters, until indeed it became almost a vice. We must study it if we would produce effective buildings, or even if we wish to comprehend drawings of ancient buildings. No one could form an idea of the baths of Diocletian, for example, stretching out equal to the whole length of Pall Mall, or comprehend the effect of the magnificent *Exhedra*, which occur in the plan, 60 feet high, with a semi-dome, 84 feet in span, without this knowledge. Some idea of the effect produced by the vistas in this extraordinary pile may be obtained at Greenwich Hospital, Chelsea Hospital, and Blenheim. An architect should endeavour to excite a succession of new ideas. It was expensive—a painter might do it more cheaply, but less permanently. Extraordinary merit was displayed at Blenheim in this respect.

It was condemnatory of a building to say, as you were obliged to say of St. Peter's in Rome, that it appeared smaller than it was; yet some had considered this a merit. He would as soon think of applauding a general for gaining a small victory with a large army, as of praising a building for such a reason. It was a great reproach to the architect.

The professor said he always dwelt with pleasure on the plan of the baths then before them as one of the finest buildings ever erected for the public advantage. Our country was remarkable for its hospitals and places of refuge, but had neglected means of affording elevating gratification to the masses. A better spirit was manifesting itself, and he was delighted to hear of public gardens at Manchester, and elsewhere. By denying the poorer classes such luxuries, they had been led to throw themselves into grossness. We might hope to see gardens, statues, and fine works of art provided for the general gratification. Considering these signs of the times, we should devise plans for arranging such.

The professor then spoke at some length on the necessity for calculating the point of view in which buildings were seen. Vignola always repaired to the spot, and drew imaginary lines to arrive at the best position. He proceeded to speak of palaces, and described that of Augustus. The disposition of the plan was the source of all character. Character for a building was the most difficult thing to be obtained, and the most essential. Palladio studied it especially; no one could mistake the purpose of his buildings. George Dance had great merit in this respect. No one could mistake the purpose of the front of Newgate; and Guildhall, although any thing but Gothic, was, nevertheless, evidently municipal. In Canina's work palaces were largely discussed. In decoration and magnificence they should stand next to temples; and it would be well if they were accessible to the people. Our French and German neighbours set us a good example. The palace of Augustus had a curvilinear front, a form which gives many varieties of light and shade. Bramante, Vignola, and Palladio employed it. In modern times it had been used with good effect at Bath. Speaking of the Adams', the professor said they were deservedly the first architects of their day; they drew their examples chiefly from Dioclesian's baths and Dioclesian's palace. Sion House and Lord Bute's were the best specimens of their skill.

He would now have the pleasure of exhibiting for the first time a restoration of a tomb at Xanthus, drawn by Mr. Hawkins. Whether considered historically or artistically, it must be regarded as a most interesting structure. It was a monument of the Lycians, of whose country Xanthus was the capital, and shewed a high state of civilization at a very early time. There was every reason to believe that it was erected in the year 546 before our æra, a century earlier than the Parthenon. The temple was not large, 52 feet by 30 feet, and consisted of an Ionic peristyle inclosing a cella, on a lofty basement. The frieze of the order occupied the place of frieze and architrave, and was sculptured with four separate groups. The first represented a fight; the second, Greeks bearing offerings; the third, Persians bearing fruits; and the fourth, a wild-boar hunt. There was another frieze under the base of the columns sculptured to represent the capture of Xanthus. Between each of the columns at the sides of the temple was a female statue standing on emblems. The pediments were adorned with sculpture, and the roof covered with Parian tiles. It was interesting to find in this ancient building, 2,390 years old, the progenitor of the Erectheum, all the refinements of art. The intercolumniation, however, it was worth while noting was *arœostyle*;* the more beautiful system of incolumniation, the *eustyle*, was not used till later, probably just before the time of Vitruvius. In the next lecture Mr. Cockerell will treat of interior arrangements.

* That is, the columns were placed widely asunder.

STONE ALTARS AND CREDENCE TABLES.

The long pending case between the incumbent of the parish of the Holy Sepulchre, at Cambridge, and the Cambridge Camden Society, relative to the right of the latter, in the name of the churchwardens, to erect a *stone altar* and *credence table* in the well-known round church of that parish, was decided against the latter in the Arches' Court, by Sir Herbert Jenner Fust, on Friday, 31st of January. Under a faculty obtained in the names of the churchwardens "to repair the church, and, as to such parts thereof as had been rendered unsightly by injudicious repairs, to restore the same as near as may be according to the original design, and according to a design and plan deposited in the registry of the court," the stone altar and credence table were erected without the knowledge of the incumbent. When aware of what had been done, he objected to allowing them to remain, and when a second faculty was applied for in the Consistorial Court to ratify the proceedings, he opposed it. The chancellor of that diocese, however, issued the faculty, and it was on an appeal against this that Sir Herbert J. Fust delivered his sentence, and has reversed it.

Relative to the altar he said, "It appears that this stone structure consists of a slab, supported by three upright slabs, all of stone, resting upon a lower slab, also of stone, and that the weight is about two tons; that the lower part is imbedded in mortar or concrete, about an inch below the floor of the chancel, which is built up to the table, and covered with encaustic tiles; and that the table was also made to adhere to the east wall of the chancel. This structure, Mr. Faulkner contends, is a stone altar, or altar table, such as is erected and used with the credence table for idolatrous and heretical purposes in Popish countries; that the rubrics and canons require that the communion-table should be of wood and moveable. On the other hand, the churchwardens deny that it is an altar, or such as is used in Popish countries for idolatrous and heretical purposes; and that it is essential to the preservation of uniformity in the internal arrangements of the church."

In order to arrive at the true meaning of the expression "table," he referred to the alterations made in the rubrics at the time of the Reformation, and from that time down to the passing of the present Act of Uniformity in 1662, and found that the word "altar" has been changed to "table." We all know, said the judge, that after the Reformation one of the doctrines of the church of Rome which was renounced by the church of England was the doctrine of transubstantiation; and it will be found that the material and the form of the altar in the Romish church are connected with this doctrine of transubstantiation, and with the eucharist as a sacrifice. It was contended that by the rubrics of the Roman Catholic, church altars must be built of stone, and must be immoveable, and various canons from the body of the canon-law were cited to shew that the altar must be of stone, and fixed; and, if not, it must be re-consecrated. The Court does not think it necessary to go through all these authorities on this part of the case, because it is not incumbent upon the Court to pronounce whether this is or is not an altar At the same time, it may not be inexpedient to consider what was the origin of the altars as used in the Roman Catholic churches, of what material they were constructed, and of what form, in order to arrive more readily at the meaning and intention of those who directed the removal of stone altars and the substitution of tables. From the authorities cited by Cardinal Bona, in his work *De Rebus Liturgicis*, we learn that the altars used in the early ages of Christianity were made of wood, and in the form of a table; that about the year 509 they began to be of stone, although the wooden tables were not altogether abolished. The form altered with the material. Sometimes the altar or table was supported by one pillar, sometimes by four or two, and latterly they assumed the form of a tomb, as of the Sepulchre of the Martyrs, whence they derive their name; and there is no doubt that at the time of the Reformation the altars in the English churches were of stone, fixed and immoveable.

At the time of the separation of the church of England from that of Rome, amongst the

many points of difference between them, one of the most important was that respecting the doctrine of transubstantiation in the supper of the Lord, which, as is declared by the 28th article of our church, "cannot be proved by holy writ, but is repugnant to the plain words of Scripture." In the reign of Henry VIII. the feeling against this doctrine was not so decided as it afterwards became; nor did any material change take place in the early part of the reign of Edward VI., for we find in his first Prayer-book, 1549, that the mass was still to be celebrated in the order for the Supper of the Lord, "commonly called the Mass;" and the word "altar" was used in different parts of the service as set forth in that book. But in his second Prayer-book, 1552, the terms "mass" and "altar" were altogether omitted. The order was for the administration of "the Lord's Supper or Holy Communion." The table was to stand in the body of the church, or in the chancel, where morning and evening service were appointed to be read; and the priest, instead of standing in the midst of the altar, was to stand at the north side of the "table," and so on through the service. But in the interval between the publication of the first Prayer-book in 1549 and the publication of the second in 1552, certain events had taken place, and certain orders and injunctions had been issued, to which it is necessary to refer. In 1547 an order had been issued to take away and destroy all tables, images, and other monuments of feigned miracles, pilgrimages, idolatries, and superstitions; and in 1550, Ridley, Bishop of London, issued an injunction to the same effect. These injunctions were of course confined in the first instance to the diocese of London and to the form of an exhortation. But there was an Order in Council issued to Bishop Ridley strictly charging and commanding him, for avoiding strife and contention, to take down altars and place communion-tables in their stead. And it appears from Burnet's *History of the Reformation*, that on the 19th of November, 1550, letters were sent to every bishop throughout England to "pluck down altars" for the avowed purpose of "moving and turning the simple from the old superstitions of the Popish mass." The change intended, therefore, must have been something more than nominal; it must have been substantial. In the short reign of Mary, which followed, one of her first acts was the repeal of all the statutes passed in that of Edward VI. respecting religion, and things reverted to the same state as they were at the end of Henry VIII.'s reign; altars were to be re-erected in the churches, and penalties were imposed upon those who, of their own accord, pulled down or destroyed them, and mass was again celebrated. But in the year 1558, Queen Elizabeth ascended the throne, and when she repealed the statutes of Queen Mary the statutes of Edward VI. were revived. In 1559 orders were issued by Queen Elizabeth for substituting the communion of the sacrament for the high mass, and for placing tables in the churches, to the same effect as those issued by Edward VI. From this order it is manifest that the tables here meant were something very different from the altars, and that they were moveable; for the direction, that it was to be placed where it stood before could not apply to an immoevable stone altar. In 1564 it appears that Queen Elizabeth issued advertisements directing, amongst other things, that parishes should provide "a decent table standing on a frame" for the communion; an expression applicable rather to a wooden table, than one made of stone. In 1569 Archbishop Parker's visitation inquiries go to the same fact as to the communion-tables and taking down of altars. In 1571 Archbishop Grindall's injunctions are remarkable for their expressions:—"All altars to be pulled down to the ground and the altar stones defaced, and bestowed to some common use; the prayers and other service appointed for the ministration of the holy communion to be said and done at the communion-table." Nothing can more clearly demonstrate the determined manner in which the measures for the utter subversion of the superstitions connected with the Popish mass were carried on than these orders and injunctions, the great object being the annihilation of the fixed, immoveable stone altars, and the substitution of wood moveable tables in their place.

We now approach a most important period, when the contest raged between high and low church in the reign of Charles I. Its origin may be found in Lord Clarendon's *History of the Rebellion*. It has been shewn that the stone altars were removed, and tables of wood set up; the questions then agitated were as to the place in which the table should stand, and its position. The Puritans contended that the proper place for the table when the communion was administered was in the body of the church before the chancel-door; and afterwards in the chancel, but placed tablewise, and not altarwise, that is, that one of the ends of the table was to be placed towards the east, so that one of the larger sides might be to the north, the priest being directed to stand at the north side, and not at the north end of the table. The high churchmen, on the contrary, contended that as the injunctions ordered that the tables when not in use should stand where the altar used to stand, it should consequently be placed as the altar was. These apparently unimportant matters were the source of violent contentions. (The learned judge then proceeded to consider the case of Archbishop Laud, who became involved in these unfortunate disputes, by introducing many of what were at that time called "innovations," an unfortunate term, as Lord Clarendon called it, and which formed part of the articles of impeachment against him.) We now come to the time of the Restoration, when the present Prayer-book and rubric were framed, when the term "table" was introduced, and the communion-table remained in the same situation as from the time of Elizabeth; that is, that it was of wood, not stone; and moveable, not fixed. The next question is, has any alteration been since made? In the rubrics of the present Book of Common Prayer the term "table" is repeatedly introduced, and in several places consistent only with the idea of an ordinary table of wood, which is moveable.

He was of opinion that the article set up in the present case, was not a communion-table within the intent and meaning of the rubric, and therefore reversed the sentence pronounced by the Chancellor of Ely.

As to the credence table, the Judge said, "I do not find any sufficient information to enable me to judge when this article was first introduced into the Romish church or into our English churches. It is clear that they were in use at the time of Archbishop Laud and before his time. It is admitted by the learned counsel on both sides that the term is derived from the Italian language; but in Adelung's German Dictionary we have the following definition of the word:—'*Credenzen*, verb. reg. act., from the Italian '*credenzare*,' to taste beforehand the meats and drink before they were offered to be enjoyed by another: an ancient court practice, which was performed by the cupbearers and carvers, who for this reason were also called '*credenzer*.' Hence, also, the *credenz teller*—credence plate—on which the cupbearers *credenced* the wine; and, in general, a plate on which a person offers any thing to another: *credenz tische*, credence table, a sideboard, an artificial cupboard with a table for the purpose of arranging in order and keeping the drinking apparatus therein.* In the Greek and Latin churches, something of the same kind was in use under another name, as I find from two of the tracts to which I before alluded. The word used to describe it is '*προθεσις*,' that is, table, or preparation, or proposition, as on it were placed the elements before they were placed on the high altar for consecration. I am of opinion, therefore, that the credence table must fall under the same principle as the other, as it is immediately connected with the other structure, and does not appear to be required or sanctioned by any law, canon, or constitution. I shall, therefore, not include that in the faculty."

The delivery of this judgment, which gives evidence of most patient deliberation and careful research, occupied five hours: the question is one of extreme importance.

VICTORIA PARK.—Park palings, to upwards of a mile in length, have been laid down as the boundary of the park, in Wick-lane and Grove-street, Hackney and Old Ford. Workmen are busily engaged in the formation of new roads, and making preparations for planting.

---

* See THE BUILDER, p. 30.

DECORATIVE ART SOCIETY.

AT a meeting held on Wednesday, the 29th ult., at 11, Davies-street, Berkeley-square, a paper was read by Mr. Crabb, containing a general notice of colour and its application to decorative purposes. After a concise exposition of the laws of colour, he explained the principles which regulated Persian art, restricting it to the use of the three primary colours, gilding supplying the place of secondaries, and that the Persian temples might be considered fine specimens of decorative colouring. The character of Grecian art was remarked upon, and the excess of colour adopted by the Romans leading to the abuse and decadence of art. The new era under Constantine was next noticed, and the grand specimens remaining to us of fine Italian art in the works of Raffaelle in the Vatican, where the use of rich dark blues round the windows presented, he thought, evidence of his consummate skill in decorative effects. In the Casina of the Ducal Palace at Mantua, by Giulio Romano, the utmost perfection of classic beauty was exhibited, the exquisite execution of which rendered his fame pre-eminent. A recommendation of a study of the old masters followed; the Caracci for graver purposes, and Titian and the Venetian school for beautiful examples of sumptuous and harmonious colouring. These remarks were illustrated by coloured copies of the works of Gruner, Owen Jones, Pugin, &c.

A discussion took place on the suitableness of our extended use of rich colouring in this country.

In May next, Mr. Crabb, in continuation of the subject, will read a paper "On the application of colour to manufactures."

And on Wednesday, 12th February, a paper will be read, "On the Physiology of Timber Trees considered with reference to manufacturing purposes." L.

[The object of the Decorative Art Society is to diffuse among those engaged in the design, superintendence, or execution of interior decoration, a knowledge of the true principles of taste, and to lead them to investigate the nature of the various arts and manufactures connected with the subject.—ED.]

CHURCH NEWS.

THE parish church of *Woodford*, near Salisbury, is about to be almost wholly taken down and rebuilt on an extended scale, the present edifice being in a dilapidated state, and not sufficiently commodious for the parishioners. ——At *New-passage*, Devonport, it is proposed to erect a new church. An application is to be made to the Admiralty for assistance. ——A new chapel for the use of the Unitarians in *Leeds*, is about being erected on the site of the present one, properly known as "Mill Hill Chapel." We understand that the proposed new chapel is to be built on a considerably enlarged scale, and to have extensive school-rooms attached, in a modern style of architecture. The subscriptions for this purpose already received, amount to several thousand pounds.——The restoration of the interior of *Chesterfield* Church has been completed by two very important alterations. The old reading desk, which formed so unsightly a contrast with every other part, has been removed, and a new one substituted, the sides of which are open, and correspond with the fronts of the galleries. The other alteration is in the chancel, where a railing of carved oak and of the oblong form has been added.——Extensive reparations are now in progress in the parish church of *Stratton St. Margaret*, near Swindon, Wilts; the edifice having been found, upon the survey of an experienced architect, in an insecure state.——A church is in progress at *Little Dawley*, in Salop. The Queen Dowager has contributed 20*l.*——Mademoiselle D'Este has given a piece of ground adjoining some premises formerly occupied by her at *Ramsgate*, as a site for a new church, which will be completed in a short time. The funds necessary for the erection have been derived from voluntary subscriptions, and include the sum of 100*l.* from the donor of the ground.——Prince Albert, in his capacity of a Knight of St. Patrick, has given 100*l.* in addition to the gift of 200*l.* by her Majesty, towards the repairs and restoration of St. Patrick's Cathedral, Dublin.

ARCHITECTURAL PROCEEDINGS ABROAD.

In Belgium, during the last two or three years, great efforts have been made to restore ancient buildings. The west front of the church of St. Gudule, at Brussels, which has been in the mason's hands for some time, is now completed. The niches have been re-filled with statues, and all the decayed parts of the stone-work renewed. The spire of the Town-hall at Brussels has likewise been repaired, as also have the town-halls of Ghent, Bruges, and Louvain, and several churches in various parts of the country.

The cathedral of Tournay, at the western extremity of Belgium, has been restored throughout, under the direction of M. Renard, and is approaching completion. This is one of the most interesting buildings in Belgium, and is well worth a journey to view it. In form it is a Latin cross, with five towers; namely, two at the end of each transept, and one at the centre of the cross. The transept is terminated at each end by a semi-circular absis. A very remote date has been claimed for Tournay Cathedral by local historians, but it seems to us that the earliest remaining parts belong to the 11th century.

At Cologne, the works at the cathedral are proceeding steadily, but not so much so as to enable us to prophesy an early completion. We are told that the model of the pulpit intended for this cathedral is exhibiting at Berlin, and astonishing the public by its magnificence. The pedestal is a bundle of columns, about two feet in height, imitating in their clustering the pillars which sustain the building. These are terminated by a capital of acanthus leaves and scrolls artistically disposed, out of which spring a system of ribs that embrace the pulpit, developing themselves in exact resemblance to those which climb towards the key-stones of the vault. Bas-reliefs, and niches containing the figures of the benefactors of the cathedral, or saints, constitute the principal decoration of the monument. At its base is Conrad of Hochstaden, and higher up, surrounding the pulpit, the twelve Apostles, and our Saviour bearing the banner of the redemption, and blessing his disciples. The canopies, beneath which these figures stand, form so many little steeples of florid workmanship, in whose upper portions are sculptured the arms of the principal German cities. The pulpit is covered by a sounding-board, on which sit the four Evangelists, with their recognized attributes. Over them, in a carved niche, is the Holy Virgin: and the cupola is closed in by a crown of flowers, on which sculpture has lavished its resources. The pulpit is ascended by a spiral staircase, winding round the pillar before mentioned. We cannot say that we have formed a high opinion of its *fitness* from this description.

At Treves, we learn from the *Art-Union* for the present month (an admirable number, full of information), a grand work is in contemplation, which will be one of the most magnificent architectural monuments of modern times; we mean the Roman structure of the so-called Constantine Palace, which, according to the unanimous opinion of the connoisseurs, is the remainder of an ancient colossal basilica. One side-front and a grand round structure of the tribunal of the whole, which, till now, has been made use of for various purposes—at present a barracks—are still existing. Of no ancient basilica are there extant so important and considerable portions, so easily to be restored. From an authentic report it appears that these remains, by an order of the King of Prussia, will be restored in their original condition, and are intended for a church of the united Protestant civil and military commune. This church will vie with the grandest and most beautiful of those which have once been possessed by the primitive Christians, to whom, as we know, basilicas, originally forming courts of justice, were assigned as churches, and which have ever been used as models. The fabric will, after its completion, form a single colossal nave, 180 feet long by 88 broad, and about 100 feet high, with a semi-circular tribunal of 62 feet diameter, separated from the nave by an arch of 59 feet span, with walls 9 feet in thickness, of which the still remaining ones are built of the best Roman bricks; and with a double row of windows, each 12 feet broad. Likewise, by order of the king, the ancient church of Maximinius, at present forming a barracks, will be restored, and is intended for the temporary use of the Catholic military congregation.

At Berlin, the inauguration of the new Opera-house, on the 7th of December, has been an event of great moment in the annals of our city. Meyerbeer's inauguration opera—an excellent composition—was received in the splendidly decorated house with much applause and interest by the royal family and an immensely crowded audience. The whole structure is said to have cost 600,000 dollars (87,500*l*.). The architect was M. Langhans, counsellor of the Board of Architects, a son of the architect who built the celebrated Brandenburger Thor (Brandenburg Gate). The Breslaw theatre is one of his buildings, which is little inferior to that of Dresden. The Berlin Opera-house, however, is superior to both, and one of the most magnificent buildings of that description in the world. The lobbies are less splendid; but halls of that kind are generally little made use of in Germany, and deprive the indispensable localities of a theatre of the necessary extent.

At Gottingen a new art-museum has been established and inaugurated, in commemoration of the celebrated Winklemann. The localities of this museum are on the ground-floor of the university, containing a grand collection of gypsum models, which the late Professor Muller used to employ for the illustration of his lectures on the classical antiquities, together with those which formerly were placed in the rooms of the university library. The university owes most of these treasures to British munificence. Besides these are to be mentioned the Vienna sarcophagus and several relievos, of which the famous "Sacrifice of the Citharoedes" is the most eminent.

At Hamburgh an exhibition of the plans for the re-erection of St. Nicholas' Church has taken place. Thirty-nine architects, German and foreign, have sent for this purpose their works, several of which are reported to be first-rate plans. Nos. 7, 32, 39—the first with the motto, "The success of the work, not its estimation, is its real value;" the second with the motto, "The work, not the architect or master;" the third with the motto, "*Labor ipse voluptas*"—are looked upon as the most eminent. The most valuable is said to be by an Englishman.

The ravages which were committed by the terrible conflagration in May, 1842, are now fast disappearing; and the great improvements which are taking place in consequence of that calamity will, in a few years, obtain for Hamburgh a degree of architectural celebrity it would else have hardly aspired to, as it now does, all at once. Many splendid hotels and shops, fitted up in a style of elegance, bespeak a degree of luxury hitherto unthought of at Hamburgh. The same may also be said with regard to newly erected private houses, a considerable proportion of which are upon such a scale and of such character as to be suitable only for wealthy families, who can afford to maintain an establishment in accordance with them. Dr. Abendroth's mansion, erected by M. de Chateauneuf, who has given the designs for it in his "Architectura Domestica" (published a year or two ago in this country), fortunately escaped destruction, although so near the scene of devastation.

Statue to Mr. George Stephenson.—The directors of the Liverpool and Manchester Railway, acting in concert with the Grand Junction Board, have determined upon erecting a marble statue in honour of the above gentleman. It is proposed, that the statue shall be erected in St. George's Hall, Liverpool, now building in front of the Railway Station. The eminent sculptor, Gibson, has been engaged to execute the work, and the price, delivered and set up, is not to exceed 1,800*l*.

The Fountains in Trafalgar-square.—These long-expected ornaments will soon be put into operation. The boring is complete, and a very good supply of water has been obtained. For several days past the two engines have been employed in raising water, which has been found quite equal to the supply required, and a jet of water has been forced to a height of about 30 feet in one of the basins. During the past week, workmen have been erecting poles, &c., to raise the stones composing the eastern fountain.

DISASTROUS EFFECTS OF THE LATE STORM.

The papers during the past week have been teeming with accidents which occurred during the storm of the 25th ultimo.

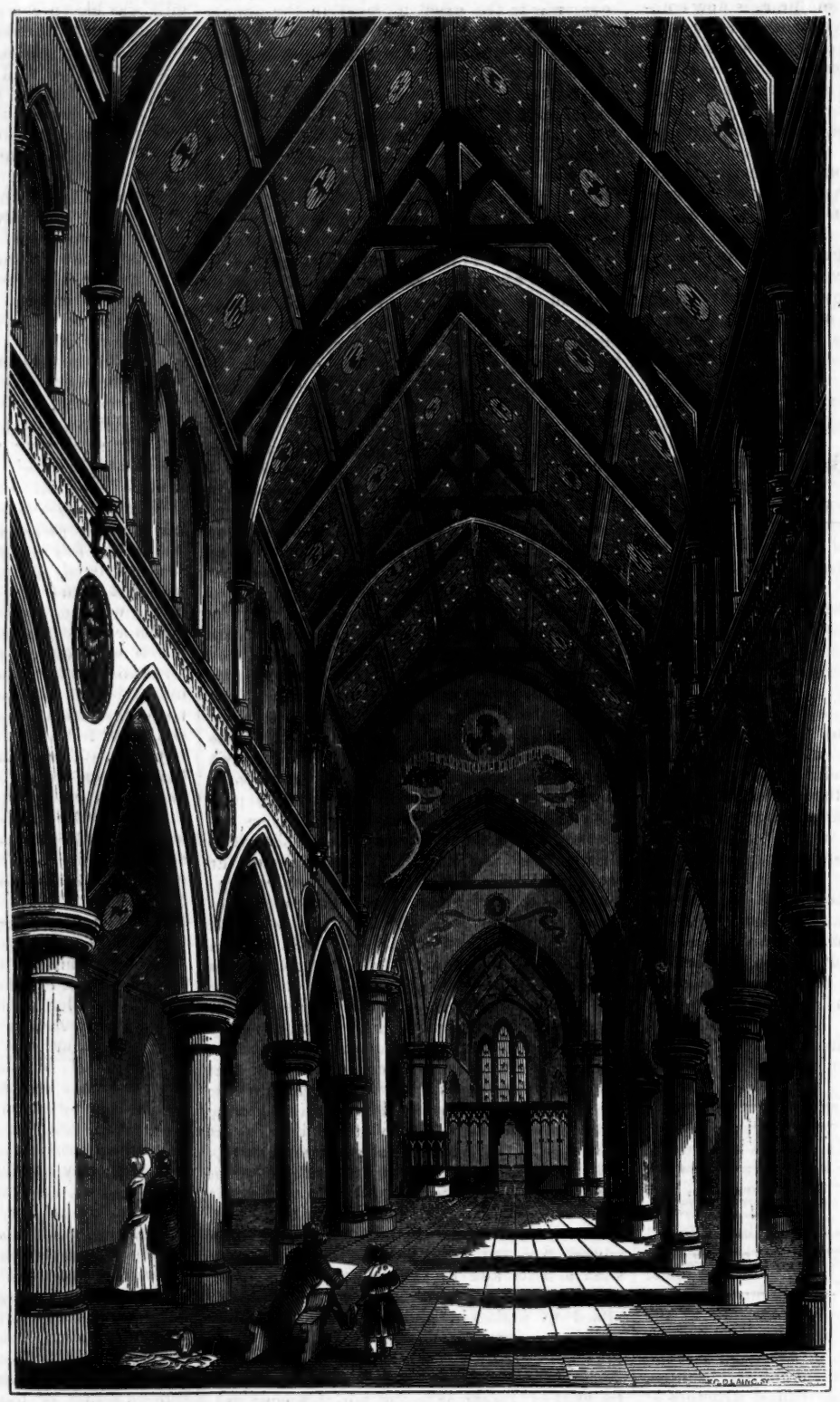
At Blackburn an entirely new and unfinished mill was blown completely down, the crash of which is stated to have been heard throughout the town as of the sudden discharge of distant artillery. The mill was what is called an "eight bay" mill, the area of the spinning part of the premises being 60 feet by 80 feet in extent, and the mill four stories high. Attached to the spinning-mill was an engine house, next to that a large boiler room, and then came an extensive foundry shed. The first floor of the mill was completed, the boards of the other floors were not down, all the windows were in, and the mill roofed over. The engine house was arched over, and the boiler room covered in. In these two latter places the buildings were partly iron; great iron beams from 15 to 18 inches across, were erected in the engine-house; the roof, &c., of the boiler room was supported by iron pillars, stout iron bars, &c.

It appears that at about a quarter-past nine o'clock, some men employed upon the premises, and living close by, observed one of the walls of the mill to bulge out; and they were discussing the readiest means of propping it up, when the gable end wall of the mill, against which the full force of the wind bore, was seen to bend inwards, and becoming thus loosened from the roof, the latter was lifted up by the wind, and falling back again with great violence, went to pieces, and carried down to the foundation every thing with it. The destruction was instantaneous and complete; part only of some of the walls remaining. The roof, first floor, beams, supporters, and the walls that fell with the roof were all smashed to pieces. The roofs of the engine-house and boiler room were destroyed, the thick iron beam ends being broken like glass. Part of the roof of the foundry shed was destroyed, as also part of some premises adjoining another side of the mill. The damage done cannot be calculated at less than 2,000*l*. Upwards of 300*l*. worth of glass was destroyed. It is said that the whole building was not to be surpassed for strength and compactness in Blackburn. In a short time the three upper floors would have been put in, and then this disastrous accident could hardly have happened.

At Derby various buildings sustained considerable injury, the Messrs. Holmes, coach-makers, had just completed the erection of a large chimney on their premises, for the purpose of having steam applied to a part of their extensive establishment, the building of which had been intrusted to Mr. Edwin Thompson. This chimney was 60 feet high, and was only waiting for the iron capping. It was surrounded by a very heavy and substantial scaffolding, a circumstance which there is every reason to believe to a considerable extent contributed to produce the accident which we have to record. On the night mentioned above, fears were entertained that the chimney so largely encompassed with scaffolding (and which had been round it for some time past, awaiting the finishing of the chimney from the cause alluded to, that of the cast-iron capping), was in danger of falling from the severity of the gale, and as early as between 5 and 6 o'clock on Sunday morning, Mr. E. Thompson went to ascetain how far this really was the case. When there the tremendous squalls of wind waved the ponderous mass of woodwork to and fro in a very alarming manner; so much so as to induce those persons who resided in the house immediately connected with Messrs. Holmes's premises, to leave them immediately, though the chimney itself appeared entirely unmoved. Fortunate, indeed, was it the residents did quit them, for at a quarter-past 8 o'clock 40 feet of the 60 feet chimney fell with a terrific crash on one side of the roofs of the five houses, literally cutting them in two, and demolishing them to the very foundations, and destroying every piece of furniture they contained.

At Chesterfield three or four pinnacles were blown down from the tower of St. Thomas's Church, and burst through the roof, destroying the gallery, and doing considerable injury to the church. Fortunately, divine service had not commenced, otherwise a fearful loss of life must have ensued, as the children of the Sunday school occupy that part of the edifice

INTERIOR VIEW OF ST. JOHN'S CHURCH, NOTTING HILL.



ST. JOHN'S CHURCH, NOTTING-HILL.

In the last number of our journal we entered into a description of this church, and gave an engraving of the exterior as seen from the south-east. In compliance with our promise, we now present a view of the interior from a drawing made by the architects. By thus giving a perfect notion of the appearance of the building and the extent of decoration, the size, materials of which it is constructed, and ultimate cost, we consider we are supplying very important data for all who are concerned in church-building operations.

The engraving represents the church as viewed from the west end, and shews the rood screen at first proposed to be erected, but which was very properly abandoned, as were also the coloured decorations in the spandrils of the arches which appear in the engraving. The pewing is omitted in the view for the sake of clearness.

BRONZE GATES FROM THE BAPTISTRY AT FLORENCE.

We mentioned last week, that through the kind offices of M. Guizot, casts from the celebrated bronze gates of the Baptistry of St. John at Florence, had been presented to the School of Design at Somerset House. Some of the newspapers said there was no room there large enough to receive them, but this was an error. They are about 17 feet high and nearly 10 feet wide, and are fixed upright in the figure room, where we recommend such of our readers as delight in fine works of art to repair some Monday morning, when the school is open to the public, and examine them for themselves.

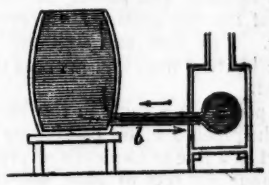
They are the work of Lorenzo Ghiberti, who competed for the commission with six other artists, including Donatello and Brunelleschi, and consist of ten panels filled with compositions from the Old Testament, and surrounded by a framework of great beauty, adorned with figures under niches, flowers, and fruit. The Creation, Noah leaving the Ark, Joseph and his brethren, and David's victory over Goliah, form some of the subjects. Those who have seen the originals say that these casts do not give a full notion of their great beauty, and it is evident to the least practised eye that the mould from which they were taken was either badly made or worn out. Michael Angelo, it is asserted, said they were worthy to inclose Paradise; if the author of them had been alive at the time, he would probably have been less eulogistic. Ghiberti died about 1455. He first studied as a painter, and seems to have had some skill as an architect, for he was associated with Brunelleschi in the construction of the cupola of a church at Florence.

Relative to works in bronze, it is to be hoped that opportunities will be afforded for the use of this material in the new Houses of Parliament and elsewhere. The art of working it has been sadly neglected in England.

THE HISTORY OF HEATING BY HOT WATER.

Sir Hugh Platt, who was the first to point out steam as a medium for heating the air of a room, suggested that hot water might be used to avoid the danger then run, in one of the processes of the manufacture of gunpowder. "To drie this substance without all danger of fire, you may cause," says Sir Hugh, "a vessel of lead, pewter, latten, or copper, to be made, having a double bottome, between which bottomes you may convey scalding water at a pipe, which water may be also heated at another roome, and then you may lay your powder upon the uppermost bottome till it be drie, and when the water beginneth to cool, you may let it out at a cock in the bottome of the vessel, and soe give passage for more scalding water by another cock." And in another part he says, "a vessel may be made to brew or boil in, by making a fire under a brass boiler, *a*, fig. 1,

Fig. 1.

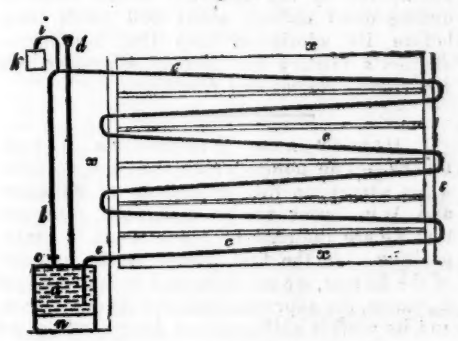


and conveying the steam or water into a wooden tub or receptacle, *b*." Rudolph Glauber, also, proposed heating a brewer's vat, by a brass ball filled with water and placed in a fire, a pipe from which was carried into the vat. "A contrivance," says Hooke, "which if prosecuted, might be very beneficial to those who require great quantities of hot water, by enabling them to use wooden casks instead of copper boilers."

Sir Martin Triewald, a Swede, who lived for many years at Newcastle-on-Tyne, before he finally settled in his native country, about 1716, described a scheme for warming a greenhouse by hot water, instead of by fermenting vegetable substances. The water was boiled outside of the building, and then conducted by a pipe into chambers formed under the plants.

Prior to the French Revolution, an ingenious application of the same medium for diffusing heat was made by M. Bonnemain, in an apparatus to hatch chickens, to supply the Paris market. In this water-stove, a transverse section of which is shewn in fig. 2,; *a*, boiler,

Fig. 2.



n on its furnace, furnished with an *expansion-rod* to regulate the opening and shutting of the ash-pit door; *d*, a pipe for supplying water to the boiler, and keeping the pipes always filled with water; *o*, stop-cock, for regulating the quantity of the ascending hot water; *b*, pipe of communication between the boiler and heating-pipes, *c*, which traverses the hatching-chamber, *x*, with a slope towards the boiler, into which it is inserted, and its lower end carried nearly to the bottom of the vessel. The air disengaged from the water by boiling, and which would accumulate in the tubes and obstruct the circulation of the hot water, escapes by the pipe, *i*, and the water that rises along with it from the tube falls in the receiver, *k*.

As the water in the boiler gets warm, and becomes specifically lighter, it rises upwards in the pipe *b*, and its place is occupied by the colder and heavier water, which flows from the pipe, *c*, and enters the boiler at its lower extremity, *e*. A current is thus established from the boiler upwards, through the pipe, *b*, and then downwards, through the range of pipes, *c c*, into the boiler, with a velocity depending on the difference between the temperature of the water in the boiler, and that in the descending or heating-pipe at its insertion into the boiler. By this means a very equable temperature was kept up in the series of compartments in which the eggs were placed to be hatched.

For many years after this period, M. Bonnemain was in the habit of describing his apparatus to others, and a few years later a good account of it, explained by figures, was given in a French publication.

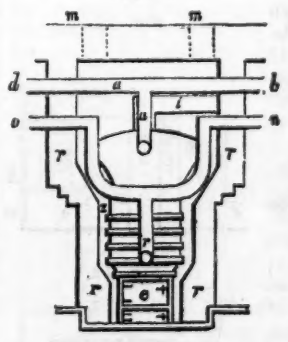
About 1812, hot water was used at St. Petersburg in the manner practised by Triewald; and shortly afterwards, in the same capital, by Count Zubow, in a similar but more roundabout method. The water made to occupy the space commonly filled by the fermenting substances, was heated by steam raised in a boiler placed on the outside of the conservatory. It is not clear whether this was before or after Mr. Braithwaite, at Kendal, warmed his counting-house by a small rectangular boiler, having its furnace included in a rectangular cast-iron case, which had the appearance of a chest placed against the wall. From the boiler a small pipe proceeded to the condenser, which was a copper vessel, 18 inches in diameter, placed under a double writing-desk. The condenser was formed on the plan of the improved cylindrical refrigeratories. A very small quantity of steam was allowed to escape at the top, which was however condensed against the lid, so that none of it escaped into the room. The steam gave out its heat to the water in the condenser; which was found, when once warmed, to retain the heat for many hours.

The Marquis de Chabannes, in 1816, introduced M. Bonnemain's method into this country; and in drawing the public attention to the hot-water system he claimed the merit of being its inventor. "The most perfect definition I can give of it," says the Marquis, "is by comparing a boiler to the human heart, and the effect of caloric on liquids to the circulation of blood in our veins. The fire is the power which gives motion to the water, as the admission of oxygen into our lungs causes the circulation of our blood. A pipe is placed at the top which may have any length or winding, but must finally return to the bottom of the boiler. The caloric which rises into the upper pipe, and communicates itself to the liquid in it, which loses that heat as it flows through the pores of the metal, or any reservoirs which may be placed in its passage for the purpose of extracting it, becomes gradually colder, and in that state pressing on the rarefied pipe which issues from the top of the boiler, re-enters at the bottom in proportion to what goes out above—thus causing a continual circulation; and the liquid coming in contact with the fire at a colder temperature, and besides with friction extracts a still greater portion of caloric."

In reducing his speculation to practice, he proposed to fix a small boiler behind the kitchen fire, and connect it by two pipes with a cylinder, containing twenty or thirty or more small pipes, open at both ends, and surrounded with hot water. This cylinder he placed under the stairs. The rarefaction in the small open pipes produced a current of warm air in the staircase, and the water which was cooled in the cylinder falling into the boiler, forced the warmer water upwards into the cylinder with a continuous circulation.

Since his time, warming by hot water has been much extended, and some variety introduced into the apparatus. That indicated by fig. 3 heats by the circulation of the water, and by warm air in the manner of a stove. The furnace is contained within the boiler, and its flue passing through it at top, is led by a 9-inch pipe, *i*, into the smoke-flue in the wall. The cylindrical boiler, *c*, is surrounded by a brick wall, *r*, leaving a space of four inches round it, which is covered in at top, and forms

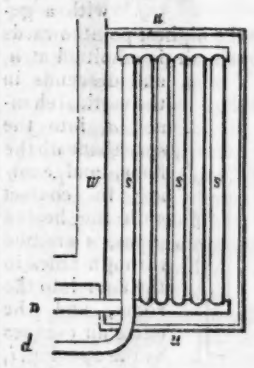
Fig. 3.



a small air-chamber. Into this inclosed space the air is admitted from a culvert, *v*, which communicates with the atmosphere under the porch in front of the building, and rising in the circular cavity, is heated by contact with the external faces of the boiler, and finally flows through the valved openings, or regusters, *m*, into the hall.

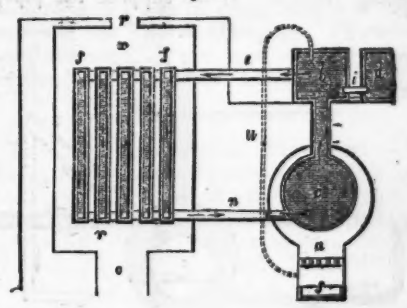
The hot water for warming the passages and staircases is conveyed from the boiler by the pipe, *a*, fixed under the ceiling of the basement-floor, with branches, *b d*, carried to each end of the building, which terminate in a series of heating-pipes, *s s*, arranged as shewn in fig. 4. These pipes are inclined from their point of junction, with the branch pipes to the exit by the descending pipe, and the whole are inclosed in a case, *u*, that has the bottom perforated with holes, to allow the cold air to rise and come in contact with the hot pipes, and then to percolate, when heated, through the holes made in the top of the case into the passages in the floor above, *o n*, the descending pipe from each heating-case connected with the return-pipe, and inserted in the bottom of the boiler. Small cocks, *u*, placed at the highest points, to emit the air that is extricated from the water. The mean temperature of the enclosed pipes Mr. Bramah stated to be 185°, when the temperature of the water in the boiler was 270°.

Fig. 4.



Mr. Manby's apparatus is a good example of flat parallel, heating surfaces, arranged as a hot air-stove. It is shewn in fig. 5, *c*, a cylin-

Fig. 5.



dric boiler placed over a furnace, *a*, a pipe rises from the upper part, and terminates in a square inclosed vessel, from which a pipe, *e*, branches to the upper end of a series of flat hollow vessels, *f f*, that communicate with each other; another pipe, *n*, on their lower end, forms a communication with the bottom of the boiler. The flat hollow vessels are inclosed in a chamber, *x*, into which the cold air is admitted through an opening in its floor, and the heated air is conveyed through an opening, *r*, in its roof into channels, which distribute it at the points where it is wanted. The water is supplied to the boiler from a reservoir, *d*, and the water, which may be expelled by the expansion from heat, is conveyed by the small pipe, *u*, into a vessel, *s*, which forms the bottom of the ash-pit, to assist by its evaporation, as Mr. Manby thought it would, the combustion of the fuel placed on the grate over it.

The operation of this apparatus is very simple. The water heated in *c*, flows through *e*, into the air-heaters, *f*, where it is cooled by the current of cold air rising through the opening, *u*, and falls to the lower part of the heaters into a pipe, *n*, which conducts it to the lower part of the boiler, and by this means a continued stream of hot water flows from the boiler into the heating vessels, and preserves their surfaces at a certain temperature.

There is no practical objection to this neat and compact apparatus, except the greater difficulty of keeping the joints in order, when compared to a similar arrangement, where pipes are substituted for the flat vessels.

The preceding methods shew the ventilating and warming processes to be kept separate,

which are combined in the apparatus indicated in the diagrams, fig. 6 and fig. 7, *c*, a boiler, from which proceeds the circulating pipe, *s s*, placed beneath the floor of the room in a nearly horizontal direction, but with a general inclination from the highest point towards the boiler, *c*. The fresh air is admitted at *n*, and descends in the vertical channel, *a*, into the space beneath the floor, and coming in contact with the heated pipes, is emitted through holes in the floor into the room, and the effete air escapes by the opening, *i*, in the ceiling. This is a very favourable disposition of the heating surface, and one that is often adopted in drying-houses: one of which is shewn in the figure.

Fig. 6.

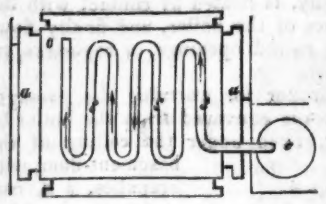
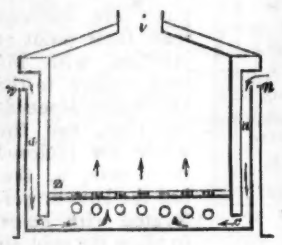


Fig. 7.

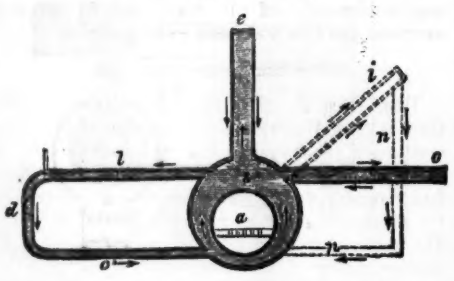


It is apparent that a similar series of pipes may be placed in a basement-chamber, from which channels may branch to the rooms which are to be heated in the floors above.

In all the apparatus which have been described, the circulation of the water is promoted by what is technically called a return or descending pipe. But in many cases, in which the difference of level is small, the effect does not appear to have been improved by this arrangement.

In the diagram, fig. 8, *a*, is a furnace in the inside of the boiler, *s*, with various pipes proceeding from it. If we suppose the pipe, *e*,

Fig. 8.

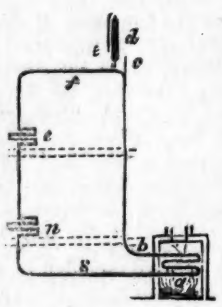


only to be attached to it, and filled with water, as that in the boiler was heated, a circulation would commence and continue by the hottest water rising to the upper part of the pipe, and the water cooled by contact with its surface falling into the boiler. It is clear the same effect will be produced if the pipe *i* were substituted for the pipe *e*; and it is also clear that the circulation would be less impeded than if the hottest water rose to *i*, and descended when cooled through the pipe, *n n*, to the bottom of the boiler, *s*, supposing in both cases an equal quantity of heat to be dissipated. If the heating pipe, *o*, was nearly horizontal, the same effect would take place from the molecular action, the water in the pipe would be somewhat warmer than if it flowed along *b*, descended by *d*, and returned by *c* into the boiler, as less of the velocity due to the temperature would be lost from friction in the straight pipe than in the return-pipe. In most cases, the return-pipe might be altogether omitted, with manifest advantage to the simplification and consequent certainty of the circulating process, the lightest water will always find the highest level, and the less it is impeded the circulation will be the more perfect, and the heating effect will be greater. The arrangement, for instance, would have been as effective had there been no return-pipe; each floor or room might have been heated by a separate pipe proceeding from the boiler, and the expense been considerably less by the simpler method.

There are two ingenious devices for continuing a circulation in cases where there is a small difference of level—the rotary float of Mr. Eckstein, and the syphon apparatus of Mr. Kewley. In some instances they are effective; but perhaps the cases where their use is necessary are not those in which hot-water heating is the most proper; they require more attention than can at all times be had from domestic servants, and are easily deranged.

The high-pressure method, contrived by Mr. Perkins, is shewn in the diagram, fig. 9. A coil of wrought-iron pipe of small diameter placed in a furnace, *a*, is continued and conducted through the building, and the necessary quantity of surface is given by forming coils, *n*, of the pipe which are placed in the rooms to be heated, and the pipe is finally returned, as at *s*, into the furnace, where it is joined to the coiled pipe, *a*, and thus forms an endless pipe. At the highest point of the heating pipe, *f*, in another pipe, *d*, of a larger diameter, placed either in a vertical or horizontal position, and which has a capacity from $\frac{1}{10}$ to $\frac{1}{12}$ of all the water in the endless pipe. This is called the expansion-pipe, and into which the water rises as it expands in heating to prevent the apparatus bursting. The filling-pipe, *o*, rises to the level, and no higher, of the lower part of the expansion or safety-pipe.

Fig. 9.



The tubes being thus arranged, the whole series, except the expansion-pipe, is filled with water by means of a force-pump applied to the filling-pipe, *o*; and as it is of importance to free the endless-pipe thoroughly from air, the water is pumped several times through the tube until it is accomplished. The endless-pipe being thus filled with water, and the expansion-pipe empty, every part of the apparatus is then strongly and hermetically closed. The endless-pipe, having a bore of about $\frac{1}{2}$ an inch, and being $\frac{1}{4}$ of an inch thick, the apparatus is capable of sustaining a very great pressure.

Its action is the same as that of the chicken-stove of M. Bonnemain. The water heated in the furnace-coil rises into the upright pipe, and then flows on a declination towards the coils placed in the apartments, and gradually giving out its warmth to the air of the spaces it flows through, returns, greatly reduced in temperature, through the pipe, *s*, into the lower part of the furnace-coil, to be heated and rise upward again continually; the difference in temperature between the ascending and descending columns producing a continuous circulation throughout the apparatus.

From the manner in which the pipes are closed from the air and placed in the furnace, the water they contain may be raised to a very high temperature Mr. Perkins states the average at about 350°, but in practice it has been observed this is considerably exceeded.

The three following diagrams will give some idea of the way in which the furnace was constructed to heat a portion of the British Museum: fig. 10 is a plan of the furnace taken above the grate; fig. 11 a longitudinal section taken through the centre of the furnace; and fig. 12 a section, supposing the front wall of the furnace to be removed; *r r*, a wall of common bricks, 9 inches thick, which incloses the furnace on its four sides; *b b*, a wall 9 inches thick, formed of Welch fire-lumps, that inclose the fire-chamber on three sides. From the face and ends of this wall fire-bricks project, to support the coiled pipe, *o*, placed in the flue. The intention of this wall is to prevent the too rapid abstraction, by the coil, of the heat from the fire which thus comes in contact with it at the opening in front only, where the hot gases turn into the back and side flues in which three-fourths of the furnace or boiler-coil is placed. The roof of the furnace is formed of Welsh lumps, in which is an opening, *m*, fitted with a moveable cover, for supplying the furnace with fuel (coke or anthracite coal being preferred). The ash-pit, *o*, is inclosed with a door, *n*, in which there is a register, *k*, double fire-door to an opening in the wall, for clearing the fire-place and furnace-bars from dust and scoria. This has a dead plate to separate the ash-pit from the heating flues; *x*, heating-pipe, rising from the boiler-coil, which passes round the internal wall in the flue, *v*, and is thus defended from the radiant heat of the fuel on all sides but one. This heating-pipe is continued from the upper part of the fire-chamber into the building; *z*, the return-pipe which enters the lower part of the furnace, and passes through the bearing bars of the fire-grating, to prevent their overheating. The dust and soot fall to the bottom of the heating flue, and prevent the coil being clogged.

Fig. 10.

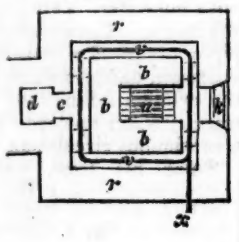


Fig. 11.

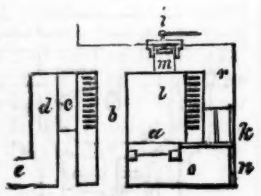
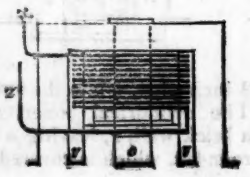


Fig. 12.



The furnace is placed in a vault in the basement-story, and the pipes, *x z*, are carried up to a height of 40 feet in a flue to two coils of pipe; one containing about 300 feet of pipe, and the other 400; about 140 feet being used for the ascending and descending pipe in the flue, and 150 in the furnace for the coil-boiler. The room containing 360 feet of pipe is 43 feet long and 30 wide, and lighted by large sky-lights in the ceiling, is raised in winter to 65°, which is a high temperature to be maintained in a room on this construction, even with this liberal allowance of heating surface.

Mr. Perkins made several skilful arrangements of his pipes in adapting his apparatus to different situations. In one example he substituted a series of pipes for a cockle, with excellent effect. The pipes were arranged in an inclosed chamber, from the roof of which channels branched to the several points that required heating, and cold air was admitted into this chamber through perforations in its floor (similar to that shewn in fig. 6), which was thus brought in contact with the hot pipes, and rose in a warm stream into the building; a disposition perhaps the most favourable that could be practised with such highly-heated surfaces, as the hot air could be properly attempered by the cold air drawn from an underground culvert about 300 yards long, before its admission into the building.—*Bernan's History and Art of Warming and Ventilating Rooms and Buildings.*

SAILSBURY AND WINCHESTER CATHEDRALS.—The points which rivet our attention when surveying the cathedrals of Salisbury and Winchester are so essentially different, that we are induced to place them in juxtaposition. At the first glance at the exterior of the former, we are delighted with its elegant lightness, the appropriateness of its ornaments, and its perfect uniformity of design, whilst we gaze with mixed feelings of awe and adoration on its "heaven-directed spire;" but when we view—steadily view—the exterior of the latter, though it command not all those pleasurable emotions, we are struck by its solemn grandeur, its vastness of extent, and its immovable solidity. When we enter the nave of Salisbury, we are still pleased with its elegance and grace, and wonder how the slender shafts of its columns sustain its massive roof; but the flood of light poured in destroys those sensations of sublimity which the darker nave of Winchester, with its ponderous pillars, admirably sustain. Salisbury Cathedral must be taken as a whole: Winchester Cathedral must be examined in its several parts. If the exterior of the one delights and charms us, the interior of the other commands our admiration and reverence. Salisbury appears as if it had sprung into existence at the touch of the wand of some mighty magician, as perfect and as beautiful as it now appears to an enraptured eye; Winchester, on the contrary, bears on its brow the marks of age, and presents to the antiquarian the most perfect specimens of the growth of the pointed style, from the period of unadorned simplicity, till at last it became encumbered, nay buried, beneath heaps of ornaments.—*Wiltshire Independent.*

INSTITUTION OF CIVIL ENGINEERS.

On Tuesday last, Sir John Rennie, the new president, on taking the chair for the first time since his election, addressed the meeting at some length. After thanking the members for the honour conferred upon him, and regretting that their choice had not rather fallen upon one of the numerous able men by whom he was surrounded, he alluded briefly to the causes of the recent changes, and the progress of assimilation towards the constitution of other flourishing societies. A well-merited compliment was then paid to the able manner in which Mr. Walker had filled the chair, and by which he had rendered himself so popular. This rendered the task of immediately succeeding him very arduous; but Sir John hoped, that with the support of the council, the countenance of the members, and an ardent devotion to the welfare of the profession, he should be enabled to advance the objects of the institution, and to promote its prosperity. He then proceeded, "when we look around us, and see the vast strides which our profession is making on every side, and the deservedly high place it holds in public estimation, we cannot but feel justly proud, for without the slighest disparagement to the pursuits of duties of other professions, I may confidently ask where can we find nobler or more elevated pursuits than our own; whether it be to interpose a barrier against the raging ocean, and provide an asylum for our fleets; or to form a railway, and by means of that wonderful machine, the locomotive engine, to bring nations together, annihilating, as it were, both space and time, or to construct the mighty steam vessel, which, alike regardless of winds or waves, urges onward its resistless course; or to curb and bring within proper bounds the impetuous torrents, converting its otherwise destructive waves to our use and benefit, whether for navigation, trade, or domestic comfort. Again, the drainage of the unwholesome marsh, and converting it into fields of waving corn; or, illuminating our cities with gas, changing, as it were, night into day; or the fabrication of machinery of endless form and ingenuity, by means of which every article which can tend to man's comfort can be produced in the greatest perfection at the smallest cost; or to recover from the bowels of the earth, nature's exhaustless treasures, and convert them to our use. In fact, we may almost say that there is nothing in the whole range of the material world which does not come under our observation, or where the skill and science of the engineer is not required in a greater or less degree to render the bounties of Providence subservient to the good of mankind. With such splendid prospects before us we have every inducement to stimulate our zeal, and to press forward in the career of improvement. He then impressed upon the members the necessity of not only communicating good papers themselves, but of engaging the junior members of the profession in their employment to keep journals of the proceedings, and to use the materials so obtained as the basis for papers which would be of a most interesting character. The members of all classes were earnestly urged to banish all other feelings except those of unanimity, harmony, and kindness; and to make the institution a rallying point, where individuals, as well as the profession generally, should meet with sympathy and support on all occasions."

The New Mechanics' Hall at Nottingham.—The foundation-stone of this building (the completion of which was celebrated last Tuesday week) was laid on the 12th of June, 1843. The erection is of brick, and stuccoed, and the front and side elevations are Grecian. The capitals of the columns are Corinthian. The external dimensions of the edifice are 124 feet long, 62 feet extreme width, and 46 feet high. The one pair is almost entirely occupied by a noble hall, 80 feet, by 45 feet, and 30 feet high. Under the orchestra is an upper gallery for natural history, 50 feet long, 8 feet 6 inches wide, and 12 feet high; also a committee room, apparatus room, music library, &c. The ground, was presented to the members by John Smith Wright, Esq., of Rempstone, president of the institution.

REPEAL OF THE WINDOW-TAX.

Some of the largest and most influential of the metropolitan parishes have determined upon petitioning Parliament to abolish this most pernicious impost. At St. James's, Westminster (the royal parish), resolutions were passed strongly condemning the tax, principally on the ground of its interfering with light and ventilation, and consequently with the health and happiness of the great mass of the population. At the Marylebone vestry last Saturday, the subject was brought under discussion; the Rev. Dr. Spry presided. Sir C. Napier said, that although the Government had a surplus revenue, and although he would support a total and immediate repeal of the window-duties, still he despaired of success—at least, he despaired that they should get a removal of the impost further than so far as it affected the poorer classes. The claims upon the Government, now that there was a surplus revenue, were pressing in the extreme, and there was one to which his attention had been called which affected the poorer classes, namely, a repeal of the duty on soap. The reason he was afraid that the Government would refuse to grant a total repeal of the window-duties was the vast amount they brought to the revenue—he believed no less than 1,200,000*l*.

On Tuesday last, a very numerous and respectably-attended vestry-meeting was held in St. Anne's parish, Westminster, Mr. W. B. Bird, churchwarden, in the chair. Resolutions in favour of a total repeal of the tax were adopted, and a petition to Parliament, founded on the resolutions, was also agreed to.

Mr. Matthew Humberton, of Clifton, near Bristol, has lately drawn up a memorial to the Premier, in which the objectionable nature of the tax is forcibly pointed out. He says, "Many and various are the claims for relief which are now being pressed upon the attention of the legislature, but of none of them, excepting the window-tax, can it be said that 'this is an absurdity in principle,'—this is an anomaly in taxation which defies the power of human ingenuity to reduce to reason—it is like some *unreal* thing which we cannot understand, for although it is a tax upon windows, it is not primarily a window-tax, neither is it a house-tax, nor a property-tax, nor a landlord's-tax, nor a tenant's-tax, nor a tax upon wealth, nor a tax upon poverty; but it is a compound of all these, and something more—it is essentially a tax upon LIGHT, and that not an artificial one, but the LIGHT OF NATURE, the enlivening, the pure, the holy light—an article beyond the reach of human commerce—an article beyond all price—an article as essential to our existence as the air we breathe, and, by consequence, it is also a tax upon AIR, upon VENTILATION, and upon HEALTH."

Important to Arbitrators.—Recently, in the Court of Queen's Bench, Mr. Pashley shewed cause against a rule which had been obtained by Mr. Godson to set aside an award that had been made in the case Plews against Middleton. The objection to the award was that the two arbitrators, who were lay gentlemen (a builder and an architect), had received some evidence not taken in the presence of the two contending parties. They had gone to certain persons whom they knew to be informed on the subject of the arbitration, and had received their statements without giving the contending parties any information of their intention to examine those persons. The learned counsel contended at some length that the arbitrators here had merely been guilty of an irregularity in their procedure; that there was no pretence for charging them with fraud and corruption; and that their error in proceeding was not a good ground on which to set aside their award. The Court, without calling on Mr. Godson to support the rule, said that it must be absolute. This was not a mere irregularity in procedure; it was something against the first principles of justice. Nothing could be clearer than that a man was always entitled to hear all the evidence on which his rights and liabilities were to be decided, and where they were decided without his having that opportunity, the decision must be treated as invalid. The award must be set aside.

FIRES FROM THE OVER-HEATING OF FLUES.

The inhabitants of Edinburgh were thrown into great consternation last Sunday week by its being discovered that the Old Gray Friars Church was in flames. The whole of the interior was destroyed, and the flames communicated with the New Gray Friars Church, adjoining, which shared the same fate,—nothing but the walls of the two edifices remain. The fire was caused by the over-heating the flues of the old church. Among the property destroyed was a table once in the possession of the Reformer John Knox.

An extensive fire broke out last Saturday week in a steam flour-mill, situate in Gallowgate, Newcastle-upon-Tyne. The premises were nearly new, and had been fitted up at great expense with all the recent improvements, the model being supplied by one recently erected in the United States. The fire originated in the upper part of the building, it is supposed from the heating of the flues, whence it had communicated with some of the beams in the vicinity. The damage done is estimated at 2,000*l*.

Last Sunday morning before the commencement of service an alarm was created at Chiswick, by the outbreak of a fire in the parish church. The beadle, while repairing one of the bell-ropes, had his attention arrested by a piece of burning wood falling upon his head from the spire of the church. Upon making his way into the belfry he found the spire, which was composed principally of wood and lead, in a blaze. Having procured assistance, the parish engine was drawn out and set to work, and the fire was confined to that portion of the steeple where it originated; but it was not entirely extinguished until considerable damage had been effected, the spire being much burnt and injured by the molten lead flowing down. The ceilings are also damaged. The cause of the fire is supposed to be the over-heating of one of the flues.

From a similar cause, St. Paul's Church, Covent-garden, was in great danger of being destroyed last Thurday morning. The beadle was fortunately on the spot, and by prompt exertion the fire was soon extinguished.

The Burial Ground Nuisance.—Mr. Geo. Alfred Walker, in pursuance of his long-continued and praiseworthy endeavours to abate the injurious practice of burying in towns, has recently drawn attention to some disgraceful proceedings at Spa Fields Burial Ground. He says:—"This ground is surrounded by houses, many of them tenanted by respectable individuals. On the right is a one-story erection, called a bone-house. For some months past the neighbouring inhabitants having observed flame and sparks issuing from the chimney, entertained apprehensions that improper practices were in progress, and on a recent occasion, called upon the engine-keeper of the parish for his assistance in extinguishing what they believed to be a fire. He demanded admission, but was refused and resisted by the grave-digger. Being determined, however, to execute his duty, he seized a crow-bar, and having threatened to break in the door, it was opened. He observed a great quantity of coffin wood piled round the room drying, a fire made entirely of coffins in the grate, and portions of human bones also. The engine keeper particularly noticed the appearance of the chimney, and charged the grave-digger with having used water to extinguish the flame, which was denied; and he was told that what he "thought was water—was pitch;" and this was the fact. Thick flakes of pitch were adhering to the inside of the chimney, thus giving palpable evidence of the material consumed,—viz., coffin wood, about two pounds of pitch being used in 'pitching' round the inner joints of an ordinary coffin. The inhabitants of Exmouth-street, Fletcher-row, Vineyard-gardens, and Northampton-row, in the immediate neighbourhood, have frequently complained of 'a tremendous stench' of a peculiar kind; which they say proceeds from the burning of human remains and coffins."

New Street to Long-Acre.—We receive great complaints against the bad and inconvenient form of many of the houses lately erected between Leicester-square and Long-Acre. We must look at them.

Correspondence.

BUILDERS' TENDERS.

SIR,—During the last year, I have been a constant reader of your valuable miscellany, and it is with considerable pain I have from time to time observed inserted under the head "Tenders" much to detract from that high tone of moral feeling and action which it otherwise inculcates? In what respect, I would ask, can your readers be edified, or that system of fair and honourable dealing which you so properly advocate be promoted, by such announcements as are frequently to be found there? Talk about competition amongst architects, why it sinks into nothing when compared with an announcement of last week as to estimates; for we are informed that some half-dozen (I hope not builders) had met together near Wisbeach in most unworthy contest to scramble for the repewing "Leverington Church;" and what is the result? why THE BUILDER is made the channel through which to inform the public that these worthies are ready to *undertake* work, I suppose from the same plans and specification (as nothing is said to the contrary), at sums varying from 25 to 60, aye 80 per cent. over or under each other; and thus builders as a body are held up to the world as men destitute of those common principles of action by which honest men are guided, and that degrading, demoralizing system of competition, so much practised in the present day, although condemned by all good men, is perpetuated. Now, Sir, THE BUILDER during the past year has been made the medium through which this sort of advertisement has been announced to the world, and I really feel a degree of disgust when I see the names of architects parading these puffing announcements which frequently, from the humble amounts, tell a sad, humiliating tale, but nevertheless are calculated to feed the cupidity of exacting employers, and damage the reputation of honest men; for the man whose estimate so far exceeds that of a speculator or needy adventurer is sure to be set down as dishonest, when nine times out of ten it is the only real honest offer amongst them, and the principle upon which it is founded the most fair. How do you account for these discrepancies (to call them nothing worse), in estimates for the same work, frequently published in your paper? It is true, Mr. Sugden has thrown some light on the subject in his letter of last week, wherein he states the quantities for the work were handed to him by some irresponsible party; on inquiry, he is informed they are *correct;* they contain 1,000 feet less of stone than he was called upon to use; the amount of the building is to that extent kept down, he signs the agreement and now (perhaps properly), complains of the consequence. I do think, Sir, your readers have some claim on you to exhibit in their proper colours such transactions when forced upon your attention, and not to allow those specious announcements "Tenders" to be published to the world with a sort of advertising impunity.—I am, Sir, yours, &c. TRUTINA.

January 30th, 1845.

[If the publication of tenders, often shewing ruinous differences between the highest and the lowest, have the effect of drawing attention, as it has drawn the attention of our present correspondent and many others, to the evils of the system, it may lead to some change, and so effect good.—ED.]

MODE OF HEATING CELLS.—PENTONVILLE PRISON.

SIR,—In reply to "A.B.," Northampton, I beg to state that the cells at Pentonville Prison are warmed by the fresh air passing over an iron case filled with hot water, previous to its being conveyed through the vertical flues leading to each cell. The apparatus was fixed by Messrs. Haden, of Trowbridge. The same system is now being adopted at the new prison at Northampton. The ventilation of Pentonville prison has been noticed more than once in THE BUILDER, but not favourably. We have, however, excellent health here, there being very little sickness amongst the prisoners, which would not be the case under a bad system of ventilation. — I am, Sir, your obedient servant,

THOMAS LAURIE,
Clerk of the Works.

CORRESPONDENCE ON NEW METROPOLITAN BUILDINGS ACT.

WIDENING STREETS UNDER THE BUILDINGS ACT.

SIR,—There is a very narrow part of High-street in consequence of the houses having been originally built thus ⟍⟋ opposite a straight line. The freeholder and the commissioners of pavement are willing to join in the expense of pulling down the fronts and setting them back, so as to make them parallel. Now the new Act, under the head "Front," says, if one front be taken down the height of one story, party timber partitions and walls under and over the same are to be taken down, and party-walls substituted.

If I read this right, this great improvement cannot be made; your view of this case is respectfully requested.—Yours,

Shadwell. J. T. L.

["For the purpose of preventing the express provisions of this Act from hindering the adoption of improvements," &c., the official referees are required by the 11th section to set forth to the Commissioners of Woods any grounds for a modification of its rules that may be submitted to them, and the commissioners are empowered to direct the official referees to make such an order in the matter as may appear to them to be requisite. The application would not be expensive, and might readily be made: it does not seem likely, however, that it would be successful in the present case.—Ed.]

TEMPORARY BUILDINGS.

SIR,—Can you inform me, through the medium of your valuable journal, whether I am at liberty to build in my garden a shed, to be used as a temporary joiner's shop for ten or twelve months, with just room for one bench, without being obliged to build according to the new Building Act? It would be clear of any other building by about 10 feet, and could not interfere with the landlord's insurance.—I am, Sir, yours,

AN OLD SUBSCRIBER.

Dover-road, February 5th, 1844.

[It must be built in accordance with the provisions of the Act.—ED.]

JURISDICTION OF OFFICIAL REFEREES.

SIR,—In your paper, 25th January, you give an extract from a decision, or rather an opinion of the official referees, as to the construction of the term "already built," with reference to buildings commenced before 1st January last, in which it is stated, "the commencement must be a *bonâ fide* one; and that our present impression is, that the erection of the footings with two or more courses of the walls themselves built in a workmanlike manner, is such a commencement." From the vast number of houses so commenced, the question becomes a most important one. With every respect and deference to the legitimate authority of the referees, I cannot understand how they at present assume to act in the matter—they are an Appellant Court from the district surveyors, called into action only upon ground of complaint by or of such surveyors. Who has the power, or what would be the course taken to insist upon parties proving the *bona fides* with which such operations were commenced? And still less do I imagine they could insist that such commencement should be done "in a workmanlike manner." The Act from the 1st January last, evidently controls workmanship and construction; but the exceptive clause distinctly implies that parties up to that period may adopt the course they have heretofore pursued. It would, from the opinion of the referees, appear that what they term a *bona fide* commencement would not be controlled as to any extent of work. They then define what would be sufficient under any circumstances. And, I presume, the inference to be drawn is, that where *bona fides* cannot be proved, a less quantity of work than they have defined would be considered an evasion of the Act, which is a term I cannot admit. It would seem, the only course that can be taken to raise the question would be by complaint of the district surveyor (treating the alleged commencement as nugatory), that he had received no notice of the commencement of the building. If resisted, by an appeal to a court of law upon the construction of the clause, I take it, the *onus probandi* would be on the district surveyor. I cannot imagine the equitable jurisdiction, given to the referees for all matters arising after the 1st January, would be permitted to operate upon questions in difference arising from acts done before such period. Another important point is involved by the quoted opinion of the referees as to the progress of works so commenced, in which they say, "the parties concerned are at liberty to pursue what course they please, so that the buildings are finished on the 1st January, 1846." To this opinion I would demur, as it appears to me, the finishing of the building is not in any way controlled. The clause treating of what is to be deemed "already built," states, houses so commenced are to be "covered in and *rendered fit for use* within twelve months thereafter." But this is merely a permissive clause, not made liable to any penalties under the Act, which only accrue for acts of omission or commission in respect of works began after the 1st January. The following clause, which is inactive as to the term "hereafter to be built," distinctly states that it is "to apply to all buildings to be built or commenced after the 1st day of January, 1845, or which being commenced shall not be *covered* in within twelve months thereafter." I would therefore inquire with whom is the power of complaint, or what penalty attaches for their not being "rendered fit for use within twelve months thereafter?" I will not further trespass on your columns, although I consider the opinion of the referees as to streets "*formed after the passing of the Act*" would admit of question.

Yours, &c.

GREENWAY ROBINS, Architect.

Hill-street, Peckham, Feb. 4th, 1845.

JURISDICTION OF OFFICIAL REFEREES.

SIR,—Referring to your note appended to the letter of "A Constant Reader" in your last No., in which you doubt the doctrine therein laid down, in respect to jurisdiction of official referees, there cannot arise a doubt that the official referees have jurisdiction in all matters upon which a difference may arise upon any point in "all buildings commenced after the 1st of January, 1845;" the question at issue is as to buildings commenced before that day. The officials have themselves admitted that they have no jurisdiction in a new district, *vide* their reply and directions in answer to Mr. Allen, and published in your No. 103.

As to old districts, the Act 14 Geo. 3, c. 78, is still in operation in all cases of beginning before the 1st of January, 1845, and will so continue to January, 1846.

Now, as there is very great doubt upon this point, it would be very satisfactory to me and many others to be enlightened, and the question settled, before we recommence our building operations, having "already commenced" so as to come within the terms and conditions of "already built," as laid down in the construction of words, 7 & 8 Vict. Trusting that yourself or some of your readers will give attention to the question at issue, and enlighten your readers thereupon,—I am, Sir, &c.,

AN OLD SUBSCRIBER.

5th February, 1845.

FALLING OF THREE NEW HOUSES IN LIVERPOOL.—Last Thursday week three new and unfinished houses in Upper Canning-street, fell with a tremendous crash, the walls carrying nearly the whole of the joists, floors, &c., into the cellar, and smashing the timber into comparatively small pieces. The buildings were of four stories in height, of brick, and formed the eastern end of a new row of houses on the south side of the street. Luckily no one was by at the time of the accident. We find that the lower or cellar portion of the walls to the datum level was roughly built of broken pieces of soft freestone called "nobling," and so imperfectly put together as to be inadequate to support the superincumbent weight rising to an elevation of 46 feet. The walls were but 9 inches in thickness, which were quite inadequate for buildings of that size. The houses are upon what was formerly Mosslake-field, in which the unbroken ground is yet a black moss to the depth of 2 or 3 feet. The foundations, however, were sunk below this to apparently a stratum of soft sandstone, and the probability is that the house gave way from the cause assigned.—*Liverpool Courier.*

Miscellanea.

Spontaneous Combustion of Guano.—In our impression of the 28th of last September, we stated on the authority of Professor Buckland, that two churches in Italy had been destroyed by fire, in consequence of an accumulation of guano in their towers. This statement was at the time considered by many well-informed persons to be extremely doubtful. The following account of the destruction of a ship, which we extract from the *Hull Packet* of last week, will go far towards proving at least the possibility of such a catastrophe.—"The steam-packet *Waterwitch*, arriving at Hull from London, on the 15th inst., brought into port the master and crew of the barque *Ann*, Storey, of Sunderland, who had been picked up by the packet in an open boat, to which they had taken on the destruction of their vessel near Hasborough Sand, on Tuesday evening. It appears by the statement of the shipwrecked men that the *Ann*, a new barque, on the first voyage, was returning from Ichaboe with a cargo of guano, and unfortunately struck on the sand, and, while beating over, shipped a quantity of salt water, which, penetrating the cargo, caused almost instantaneous combustion. A volume of smoke rising through the fore hatchway warned the crew of this new danger, and induced their taking immediately to the boat, without saving any thing but themselves; and scarcely had they done so, when a tremendous explosion of the gas, engendered by the partially-fired guano, blew the stern out of the vessel, which then filled, and sank in deep water."

Fall of a House at Limerick.—A most appaling and fatal accident occurred in Limerick last Sunday night. A woman named Shaunessy, resident in Sheep-street, off Athlunkard-street, had died in the morning, and her husband, conceiving he had not sufficient room to wake the corpse in his own house, applied to a man named Mason, who lived opposite, for the use of the upper part of his house for the purpose. Mason, knowing the rottenness of the timbers, and fearing the consequences, strongly objected. Even the mother of deceased, offered her house, which had no lofts, and where no accident could have occurred. But all was of no avail, Shaunessy persisted in having the wake at Mason's. The house consisted of three stories, and the upper or attic one being unoccupied, the wake was held there. A large number of women and two men were collected in the evening, when, about 8 o'clock, the floor gave way in the centre, and the entire were precipitated to the floor beneath, which also gave way, and all came to the under floor or kitchen with a tremendous crash and wild shriek, which was heard at the distance of several streets. By this melancholy accident eleven persons were killed and from sixteen to twenty grievously maimed —some with legs and arms broken, skulls fractured, and one man had his back broken.

Public Nurseries for Children.—An Institution has been opened in Glasgow for the reception of children, from one to four years of age, belonging to the working classes, and is calculated to be of great service. A large building has been taken in an open part of the city, furnished with an extensive green and play-ground for the recreation of the children. The *Glasgow Examiner* says, "the ground floor contains a large kitchen, and a hall in which the juvenile community are assembled at meal hours. On the next floor there is a range of sleeping apartments, furnished in a plain, but neat and comfortable manner, and a room in which the children are tended by nurses, and, if competent, taught some useful lesson by means of drawings or pictures similar to those used in infant schools. The inmates are from one to four years of age. Some of them, whose mothers are employed during the day, remain in the institution from seven in the morning till the same hour in the evening. During that time they are carefully attended and supplied with nutritious food for the trifling sum of twopence. Others, such as orphans, receive, in addition, comfortable lodging at night, for the same insignificant sum. Every thing, in short, is done, and done faithfully, 'to supply, as far as possible, the place of the absent parent;' and this is abundantly manifested by the appearance of the children, who seem contented, happy, and comfortable."

Heating Green-Houses.—At the Hope Nursery, Leeming-lane, Bedale, is a small propagating-house, which is heated in an ingenious manner. The top of the furnace of the stove having been removed, it was replaced by a small boiler, from which two iron pipes, of 1½ inch in the bore, proceed in the usual way, pass to the propagating-house, and enter what may be called the propagating-box, the one at the top near the front corner, the other near the bottom of the back corner; the box occupies a pit having a path before and behind; it is three inches in depth in the inside, and is formed of 1½ inch deal, having a division up the centre for the circulation of water; the top is covered about three inches in depth with sand, there being an edging of wood that height all round, and in this the pots are plunged. The temperature of the house is kept up by zinc pipes, which issue from the front of the box at the corner near where the flow iron pipe enters. The whole is found to answer very well, especially in autumn and spring, when heat is most required; it is all gained heat. A span-roofed house here is glazed in a peculiar manner; the glass, after being placed on a bedding of putty in the usual way, is not puttied down, but painted with white lead of the consistence of rather thick paint; two or three coats of this are said to answer admirably; the white lead does not give way and peel off as putty often does.—*Correspondent of Gardener's Chronicle.*

Fire Annihilator.—Dr. Ryan, of the Polytechnic Institution, has recently delivered a lecture "On Fire," for the purpose of explaining an apparatus lately invented by Mr. Phillips, of Bloomsbury-square, called the "Fire Annihilator." After explaining the *phlogiston* theory of the earlier chemists, and the more modern views of Lavosier and others, the lecturer proceeded to prove, that combustion under all circumstances is the result of chemical action. A considerable portion of his lecture was afterwards devoted to the consideration of supporters and non-supporters of combustion, or to those conditions which are necessary either to maintain fire or to prevent its action; he more especially pointed out the effect of volumes of free nitrogen or free carbonic acid upon the flame of coal gas; and, after shewing that combustion instantly ceased in an atmosphere containing but a small per centage of these gases, he proceeded to explain that Mr. Phillips used a mixture of coke, nitre, and sulphate of lime, with a little water —the products of its ignition were principally free nitrogen, carbonic acid, and water vapour. To illustrate the office of the apparatus, which for a large house is only the size of a small stove, Dr. Ryan kindled a fire of patent wood, to which he added about half a pint of spirits of turpentine, in an iron house; when the flame was at its height, he introduced a small apparatus, holding not more than two ounces of his material, and in half a minute the fire was completely extinguished. As the apparatus is small, and may be kept charged, requiring only the action of a trigger, on the alarm of fire it may be carried to any part, and immediately used. It will prove of vast utility in ships, as it may be placed in the hold, and on an alarm of fire, the trigger may be pulled, and the gas will escape, thus putting a stop to the ravages of the devouring element.

The new bridge at Besons, over the Seine, composed of seven arches of 80 feet span each, has been opened to the public. It is said to be a remarkably light and elegant construction in iron, built according to Mr. Neville's system of horizontal trussed girders, and was completed in six months.

Artesian Wells in Africa.—M. Fournel has suggested to the Paris Academy of sciences, that by sinking artesian wells it would be practicable to have a constant and abundant supply of water throughout the whole extent of the desert.

Statue to Sir H. Fleetwood.—The inhabitants of Fleetwood are about to erect a statue to Sir H. Fleetwood, the founder of the town, and originator of the Preston and Wyre railway.

New Plaster.—A new plaster has been invented by a lady named Marshall. It is said to dry with great rapidity, to present a good surface for painting, and to be cheap.

The Royal Exchange.—The merchants of London have felt themselves so seriously inconvenienced by some of the peculiarities of the Royal Exchange, that a petition, of which the following is a summary, has been presented to the Gresham Committee:—"The undersigned merchants of the city of London are of opinion that, in the construction of the new Royal Exchange, sufficient attention has not been paid to the comfort of those who attend the same, and beg most respectfully to submit to the Gresham Committee the following alterations, which are necessary before they can assemble there without danger to their health and personal comfort. The alterations suggested are—1. That the area be covered in. 2. That some remedy be provided to remove the cold damp from the pavement. 3. That a remedy be also provided to protect them from the currents of air." The above petition has been signed by Messrs. Barings, Rothschilds, Heath, Morris Prevost, Doxat and Co., Lemme and Co., and some hundreds of the first firms in the city. After much discussion in Committee, the clerk was directed to communicate to the memorialists, "That in the month of September, in the year 1838, before the Gresham Committee took any steps whatever as to the erection of a new building, they applied by circular to most of the leading merchants and brokers, requesting their opinion as to whether the new Exchange should be a covered hall or partially open, as in the original Exchange of Mr. T. Gresham, and in the one recently destroyed; that besides, the committee took every opportunity, by personal inquiry, of ascertaining the wishes of their fellow-citizens on the subject; that the result of the circular and of these inquiries was, that a large majority wished the Exchange to be partially open, as heretofore, alleging the great noise in the Bourse at Paris, and the necessity for ventilation of the most free kind, as their reasons for the decision; that in consequence of this determination they directed a part of the merchants' area to be left uncovered as before, but that, for greater shelter, they further directed that the covered space should be increased from one-half (the proportion of the space covered in the late building) to two-thirds, and that the architect of the present edifice had strictly followed out these instructions: and for these reasons the committee could not comply with the wishes of the merchants; that with regard to currents of air, the committee had directed such inner doors to be put up at the north and south entrances as might check the draughts, at the same time providing that such doors should not interfere with the extensive uses of the area of the Exchange as a thoroughfare to all the neighbouring streets, the Bank, the Stock Exchange, and the other important public and private buildings of the neighbourhood."

The Quicksand under the New Houses of Parliament.—Our readers may not be generally aware that the foundations of the new Westminster Palace actually float on a quicksand. Westminster Hall and the old palace for many centuries (upwards of eight) have done the same, so there would seem to be no reason for apprehension. This quicksand unless confined, has a tendency to rise, spread, and shift itself. It is thoroughly surrounded by walls of solid concrete, and above it, keeping it down like the cork of a bottle, is a deep nest of concrete. The foundation, however, of the Victoria or Record Tower, as it is called, has passed through the quicksand; because of the great weight the tower will have to sustain, a very ticklish operation was performed last week near the ventilating shaft of the present houses. To prepare for new buildings, it was necessary to excavate immediately close to this shaft, and even below it. The workmen proceeded, almost inch by inch, stopping down the quicksand the instant it began to rise. Fears were entertained for the safety of the shaft, which weighs 200 tons, but no accident whatever happened. The danger is passed, and the works are nearly done. It was curious to see the excavations exhibiting at once the old and new Houses of Lords and Commons, Westminster Hall, the crypt of St. Stephen's, the foundation of the ventilating shaft, &c.—*The Bristol Mirror.*

A Cemetery at Hull is talked of, and a public meeting is to be called to consider the proposition.

Tenders.

The tenders for Twenty-four Engines—sixteen of 43-inch cylinder, or about 45 h. p., and eight of 12 h. p.—were received at Exeter by Mr. Brunel and the authorities of the South Devon Railway. The contracts were taken by Boulton and Watt, and Messrs. Rennie—the amount from 40,000*l.* to 50,000*l.* The principal Cornish engineers and founders were in attendance.

Tenders delivered for Finishing a House, commenced by J. Brown at Walworth, for Mr. Ireland. Charles Foster, Esq., Architect, 3, Northampton-street, Islington.

Pickford	£960 0
Hawkins	894 10
Brake	890 0
Barnesby (for Mr. Flower) ..	795 0

Opened in the presence of the parties.

NOTICES OF CONTRACTS.

For erecting and completing the Lower Sluice and Sluice-Pit at the top of the Eau, Brink Cut, about 4 miles above Lynn.—Messrs. Walker and Burges, 23, Great George-street, Westminster; or Mr. George Game Day, Clerk to the Middle Level Drainage Commissioners, St. Ives. February 10.

For the erection of New Buildings in Pembroke College, Oxford.—Plans, &c., prepared by Mr. Haywood, Architect, may be seen at the Master's House. February 11.

For the erection of two Fever Wards in the workhouse at Slough.—C. P. Barrett, Clerk of the Union, Eton. February 11.

For the erection of a Cast-iron Tank, 52 feet diameter and 16 feet deep; and for a double or Telescopic Gasholder, to work in the same. Also for a double or Telescopic Gasholder, 70 feet diameter, to work in a tank 18 feet deep.—Mr. John Rose, Engineer, Gas Works, Preston. February 12.

For a supply of Railway Fastenings for the Great Southern and Western Railway, Ireland.—Mr. William Taylor, Secretary, 3, College-green, Dublin. February 17.

For such Mason's and Pavior's works (stone paving only) as may be required by the Commissioners of Sewers of the City of London, for the term of three years, from the 25th of March next. Joseph Daw, Esq., Guildhall, London.—February 25.

For the supply of Granite or other hard stone for the service of the Stone's End district of the Surrey and Sussex Roads.—Road Office, Charing Cross, and W. S. Gaitskell, Esq., 21, Stamford-street, Blackfriars' Road.

For supplying the Great Western Railway Company with such quantity of the following articles as may be required from the 1st of April, 1845, to the 31st of March, 1846; viz. Bar and Pig Iron—Castings—Bolts and Rivets—Copper (sheet and ingots)—Ironmongery, screws and nails—Brass and Iron clasp, closet tacks and wirework—Lead and Zinc—Steel for springs—Timber—Tubes, brass, copper, iron and zinc—Patent Wheel-tire, and various other articles.—Chas. A. Saunders, Esq., Secretary, Paddington. February 27.

For the Mason's and Pavior's Works, supply of Guernsey Granite Chippings and Yorkshire Paving, for one Year, from the 25th of March next, for the parish of St. George, Hanover-square. Mr. R. Lees, Clerk to the Paving Committee. March 4.

For the supply of 20,000 tons of Iron Rails, and 7,000 tons of Iron Chains, for the Newcastle and Berwick Railway.—George Hudson, Esq., Railway Office, York, and at 24, Great George-street, Westminster. March 4.

For the supply of 100,000 Railway Sleepers for the Newcastle and Berwick Railway.—George Hudson, Esq., Railway Office, York. March 4.

For the supply of 11,000 feet of nine-inch cast-iron Pipes for a new line of Aqueduct to be laid in the Island of Malta.—Vin. Casolani, Collector of Land Revenue, Office of Land Revenue and Public Works, Valletta, Malta. March 31.

APPROACHING SALES OF WOOD, &c.

BY AUCTION.

February 10.—At the Gun Inn, Eridge Green; 4,300 superior Fir Trees of various kinds, long length, large size, and clean growth; also a large quantity of capital Larch, 32 large Ash Trees, about 900 smaller ditto.—Mr. Hart, auctioneer, 1, Wilton-place, Grosvenor-road, Tunbridge-wells; and Mr. H. Hickmott, Eridge Castle.

February 13.—Under the Arches in the Railway Path between the Spa-road and Greenwich: A large quantity of Portland, Granite, and Bramley-fall Stone in blocks, coping, caps, steps, sleepers, paving, foot stones, Bath blocks, &c. &c.—Messrs. Southey and Son, Auctioneers, 191, Tooley-street.

February 14.—At the Cock Inn, Rocester, Staffordshire; various lots of Oak, Ash, Elm, Alder, Aspen, Willow, Poplar, Larch, Chesnut, Fir, and Beech Trees, all lying on the banks of the Cauldon and Uttoxeter Canal.—The office of Sir William Horne, Southampton-buildings, Chancery-lane; or Mr. William Pegg, auctioneer, Uttoxeter.

February 17, at Bristol; Feb. 18, at Dorsley; Feb. 19, at Cirencester; Feb. 20, at Leominster,—a number of Maiden and Pollard Oaks, and Maiden Elms.—Messrs. Clark, Medcalf, and Gray, solicitors, 20, Lincoln's-inn Fields; and Messrs. J. P. Sturge and Co., surveyors, Bristol.

February 20.—At the back of St. George's-terrace, Dalston Rise; 300,000 sound new Stock and Place Bricks, and a large quantity of Burrs and Bats.—Messrs. Humphreys and Wallen auctioneers, 68, Old Broad-street.

February 21.—At Garraway's Coffee-house, Cornhill: 300 loads Quebec Red Pine; 100 loads Yellow Pine; 100 loads of Ash; 80 loads of Oak; 10,000 Yellow Pine deals and battens; 10,000 Spruce deals and battens.

February 25.—At the King's Arms Inn, Hemel Hempstead; a large Fall of capital Oak, Ash, Elm, and Beech Timber Trees, the greater portion of which are of very large dimensions and superior quality.—Mr. James Adams, auctioneer, Clarence-street, Staines, Middlesex.

COMPETITION.

Plans and estimates are required for a Workhouse, to contain about 1,180 persons. The whole to be done in a plain and substantial manner, without any expensive embellishments. The plans and architects' estimates to be sent to Robert Mercer, the Clerk of the Clifton Union, Pennywell Road, Bristol, on or before the 17th of February next, and the Board of Guardians will adjudicate on the 28th. The architect producing the best plan in the estimation of the Board will be employed at a sum not exceeding 5 per cent. on the outlay, and a gratuity of 25 guineas will be given to the architect producing the second best plan in the opinion of the Board.

TO CORRESPONDENTS.

"Ignoramus" *asks if "such a work is to be had as a dictionary of all terms used by architects and surveyors as applicable to buildings?" An excellent glossary of such terms* (170 *pages*) *is to be found in Gwilt's "Encyclopædia of Architecture." We are glad of an opportunity to say this Encyclopædia is a monument of ability and industry.*

"Scrutator."—*The correction is not advisable.*

"Honestas," "A Builder," *and other correspondents who have favoured us with communications on those stir-exciting words in the Buildings Act, "commenced before," must pardon us for not publishing them. They would occupy the whole of the journal. The subject is discussed in more than one part of the present number.*

"J. H. (Pontypool)" *wishes to know the materials used for polishing marble, and how they are to be applied.*

"G. R.," *if he will kindly refer to former numbers of* The Builder *will find that the fallacies of London Building Societies have already been fully exposed in our pages. The pamphlets and his request shall be forwarded. We shall be happy to hear from him on other subjects.*

St. Bartholomew's Hospital views next week.

"J. K. (Gorey)."—*The drawing he refers to did not reach us.*

"W. C." *wishes to have the address of a timber-merchant in London who has some well-seasoned oak-plank.*

"Antiquarian" *wishes information respecting an ancient pavement found in Lad-lane two or three years ago; supposed age, &c.*

"Enquirer" *should take the opinion of a surgical friend.*

"Constant Subscriber" (Hand-rails).—*We have no definite intention to continue the subject.*

"W. Hawley" *is thanked for his communication; it shall appear.*

"T. H. Cash."—*His request shall not be lost sight of.*

"E. C. L."—*The address arrived too late for examination. It shall be read.*

"G. W." (Hackney), *must give notice to the surveyor in both cases.*

"J. Pickard."—*The sketch shall be engraved forthwith.*

"A Subscriber" (as to undersetting) *next week.*

"An Early Subscriber" *is anxious to have "an analysis of a good brick, shewing the exact proportion of each material used in its composition."*

"An Observer," *seeing our notice of the frescoes at Buckingham Palace, refers us to two works of that kind executed by an English artist in the spring of* 1842, *at the Literary Institution, Gravesend.*

"One of your Subscribers" *shall have consideration.*

**** We have to acknowledge several very complimentary letters on the improvement visible in our columns. We are not insensible to praise, and will endeavour to deserve it. Arrangements are in progress for still further increasing the efficiency of the journal.*

BOOKS RECEIVED DURING THE WEEK.

The Quarterly Journal of the Geological Society—Old England, part 14—*Supplement to Penny Cyclopædia—Professor Byrne's Report on the proposed Great Western Irish Railways.*

MEETINGS OF SCIENTIFIC BODIES

During the ensuing week.

Monday, February 10.—*Geographical*, 3, Waterloo-place, 8½ P.M.; *British Architects*, 16, Grosvenor-street, 8 P.M.; *Medical*, Bolt-court, Fleet-street, 8 P.M.

Tuesday, 11.—*Medical and Chirurgical*, 53, Berners-street, 8½ P.M.; *Civil Engineers*, 25, Great George-street, 8 P.M.; *Zoological*, Hanover-square, 8½ P.M.

Wednesday, 12.—*Society of Arts*, Adelphi, 8 P.M.; *London Institution*, Finsbury-circus, 7 P.M; *Graphic*, Thatched-house Tavern, 8 P.M.; *Pharmaceutical*, 17, Bloomsbury-square, 9 P.M.

Thursday, 13.—*Royal*, Somerset House, 8½ P.M; *Antiquarian*, Somerset House, 8 P.M.; *R.S. Literature*, 4, St. Martin's-place, 4 P.M.; *Medico Botanical*, 32, Sackville-street, 8 P.M.

Friday, 14.—*Astronomical*, Somerset House, 8 P.M. (Anniversary); *Royal Institution*, Albemarle-street, 8½ P.M; *Philological*, 49, Pall Mall, 8 P.M.

Saturday, 15.—*Asiatic*, 14, Grafton-street, 2 P.M.; *Westminster Medical*, 32, Sackville-street, 8 P.M.

ADVERTISEMENTS.

TO STONE MERCHANTS, MASONS, CONTRACTORS, AND BUILDERS.

CLIFF and HUSLER take this opportunity of acknowledging the very favourable encouragement they have received since opening their Stone Wharf near the Ferry-house, Isle of Dogs; and, while expressing their gratitude, would assure their numerous customers that no exertion shall be spared to render this wharf a depôt where at all times their orders can be supplied with Stone of the best quality, and with promptitude and dispatch.

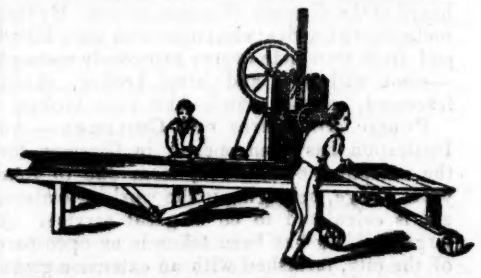
There is now a large stock of Self-faced and Tooled York Landings and Paving, Tooled Steps, Sinks, and Coping; fine Slabs for Chimney-pieces and Hearths. All kinds of Yorkshire Block Stone, Bromley Fall, Harehills, Parkspring, and Robinhood. A large and choice selection of Portland and Bath Stone from the best quarries. Fire Bricks, Lumps, Tiles of every description; Lump and Ground Fire Clay.

N.B.—Orders for Cargoes to be delivered direct to a wharf or in the river, executed at short notice and on the most liberal terms.

A powerful Crane on the Wharf, and Stone and Goods Landed and Re-shipped on reasonable terms.

Agent: JOHN TRICKETT, No. 14, Ferry-street, Isle of Dogs.

HATCHER'S BENNENDEN TILE-MACHINE, Manufactured and Sold only by COTTAM and HALLEN, Engineers, Agricultural Implement Makers, &c., 2, Winsley-street, Oxford-street, London.



This is the most efficient Machine that has been invented for the purpose of making Drain Tiles. Any shaped Tile can be made by merely changing the die, which can be done in a few minutes. It requires but few hands, viz., one man and three boys. With this amount of labour, the product of a day of 10 hours is as follows, viz:—

1 inch diameter of Tile, 11,000	1½ inches diameter of Tile, 5,800
1¼ " " " 8,000	2½ " " " 3,200

The Machine is moveable down the drying-sheds, so that it requires no extra boys to carry the Tiles, nor are shelves required in drying. It has been in full operation for upwards of four months at Hempstead Park, near Cranbrook, Kent. No charge made for Patent dues or licence. The purchase of the machine includes free use of it.

TO BRICKMAKERS AND OTHERS.

JONES'S PATENT BRICK and TILE-MAKING MACHINE.—With the view of making the public more extensively acquainted with the Advantages resulting from the use of his Machines, the Patentee has had a Brick-making Machine, with all the recent improvements, erected by Messrs. Easton and Amos, Engineers, and the same may be viewed at work at the Patentee's premises, Queen's Wharf, next the Star Coal Wharf, King's Road, Old Street, Pancras Road, on and after the 12th inst. between the hours of eleven and three. These Machines will enable the Brick-maker to mould cheaper and better Bricks, which will dry in one-third less time, require less straw and stack ground, and burn better, and will save the expense of pug-mills and moulds. Machines supplied or let on hire, and licences granted on application to the Patentee at the above address, where Prospectuses may be procured, as also on applying by letter (post paid) to Messrs. Cardale Cardale and Jliffe, Solicitors, 2 Bedford Row.